AFV G2

A MAGAZINE FOR ARMOR ENTHUSIASTS

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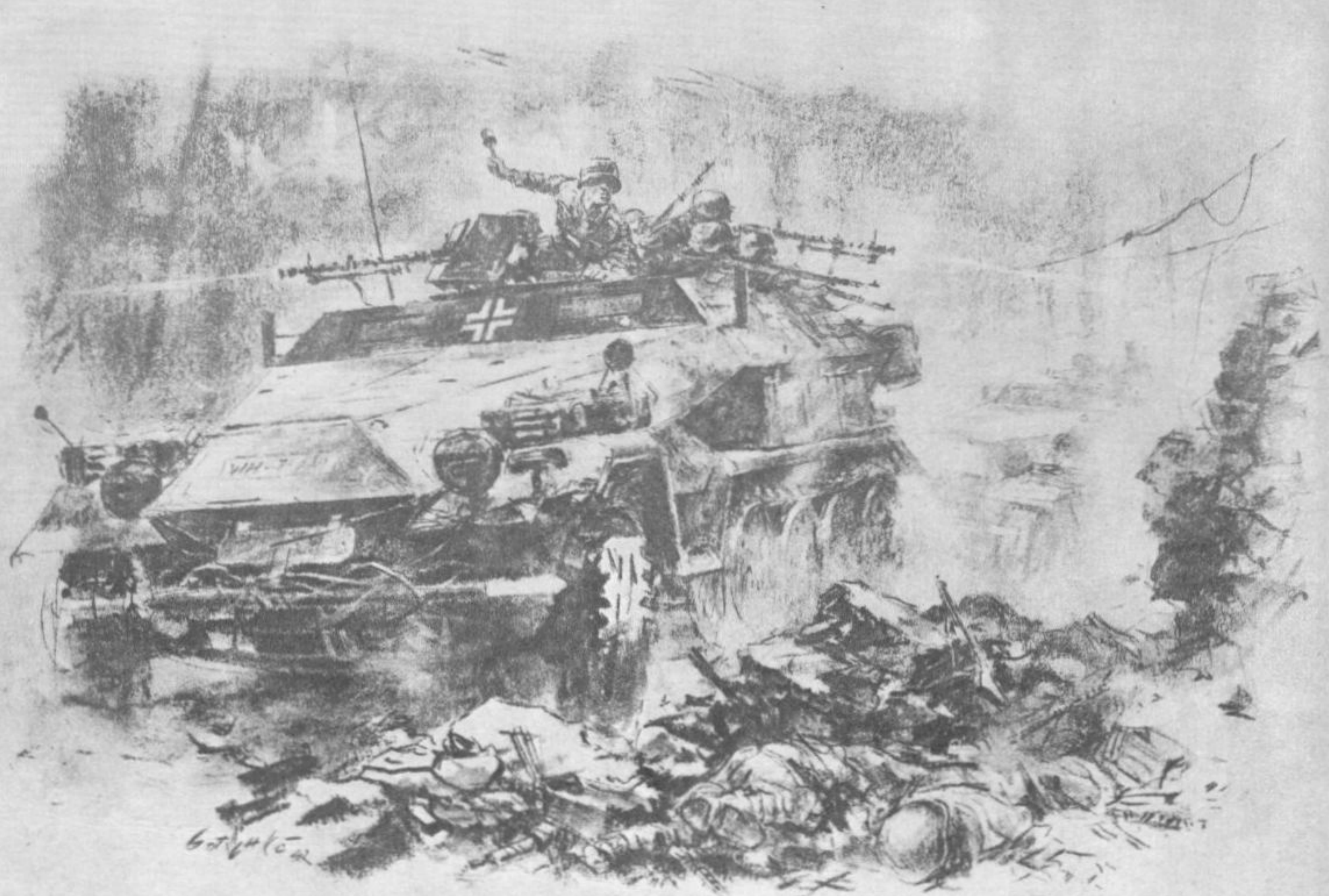

The AFV-G2 is a magazine, published monthly, for Armor Enthusiasts, with the purpose of gathering and disseminating information about Armored Fighting Vehicles and their employment; to provide an opportunity for persons seriously interested in the History of Armored Fighting Vehicles, in the modeling of these AFV's and associated equipment, and in the playing of military Wargames utilizing miniature AFV's, to share ideas and items of mutual interest, and to promote an interest and awareness in the subject of AFV's.

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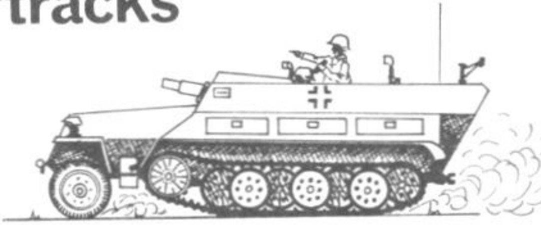
COVER: Following this month's theme on the German Sd. Kfz. 251 Armored Halftrack and its variations, this month's cover was drawn in charcoal and pen-and-ink by a German artist, named Gotschke, in 1942. It illustrates the Armored Halftracks and mounted Infantry in the attack, breaking through an enemy position.

The HANOMAG Armored Halftracks

by Norb Meyer

Part One



In the year 1929, a man by the name of Heinz Guderian, then a Major in the German Reichswehr, came to a conclusion regarding warfare in the future. He concluded that tanks would never be able to produce their full effect until the other weapons, on whose support they must inevitably rely, were brought up to the same standards of speed and cross-country mobility as the tanks themselves. This, in essence, was the idea which spelled-out the beginning of the vehicle that would become the most widely produced vehicle of the German Armored Force, the Hanomag Sd. Kfz. 251.

Guderian's principles were first put into effect in 1935, when attempts were being made to equip the soft-skin half-track vehicles with armored bodies, which would allow a full infantry squad to ride into combat fully protected. Eventually, the most suitable half-track was chosen for mass production; this was the Sd. Kfz. 11, the standard 3-ton vehicle of the new Wehrmacht. The conversion was a simple one, consisting of the installation of an armored body on the un-modified chassis of the Zugmaschine. The armored version was given the designation of Sonder-Kraftfahrzeuge 251. (or Special Purpose Vehicle No. 251). Production of the armored half-track was slow during the middle 1930's, until the start of the Second World War, when the campaign in Poland demonstrated the value of armored transport for the infantry. It was unfortunate, however, that the Sd. Kfz. 251. was not developed into the fully fledged fighting vehicle that Guderian had envisioned. He had wished for a vehicle that could carry infantry along with the tanks; the infantry would be able to engage the enemy without having to dismount from the carrier vehicle. This role was never fully realized, but it became more or less the standard practice of Panzergrenadier units later in the war when this role was forced on them.

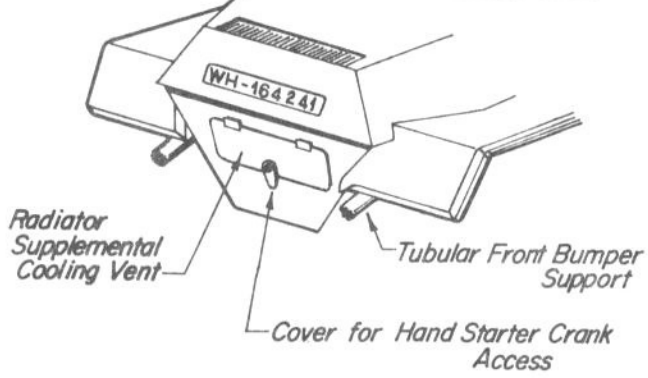
To say that the Hanomag Sd. Kfz. 251 was an intricate vehicle would be an understatement The first person to notice this was the driver, for his steering-wheel was in an inverted position. This made the vehicle relatively difficult to steer, and this coupled with the poor visibility, sometimes gave the driver a real feeling of claustrophobia. Add to this the intricate gearing, the complicated drive train, and the lubricated needle-bearing track, and it becomes apparent that the Hanomag was prone to mechanical failure as well as driver error. The problems with drivers came to General Guderian in a rather sudden way, while he was in his command Sd. Kfz. 251/6, in Poland. The vehicle came under Polish artillery fire. Guderian ordered his driver to "turn about", and the driver drove straight into a ditch while trying to turn, breaking the front axle, and forcing the whole lot of them to hike back to the rear and procure another vehicle.

The Sd. Kfz. 251 Armored Personnel Carrier came in many different versions, and was produced in four distinct models. The first two of these, the Ausführung (or Model) A and the Ausführung B, are the subject of Part One of this article.

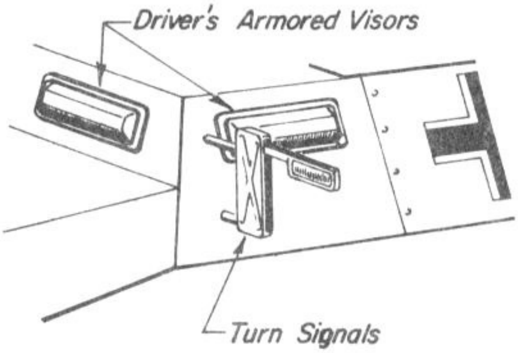
The early models of the Sd. Kfz. 251. were produced from the mid-1930's until 1941, when changes and improvements brought about the Ausführung C. The initial "Model" A was not produced in an great quantity, as it was being replaced by the "Model" B when the French campaign started. The Ausführung A can be easily recognized as it did not mount any machine guns, and usually had a canvas top covering the crew compartment. The early models of the "B" mounted a single MG-34 on a rear swivel mount which was intended for anti-aircraft use. Later versions of the "B" added a second light machine gun situated to fire forward from the front portion of the crew compartment; this second MG-34 was later equipped with an armored gun shield for the protection of the gunner, who often fired his weapon during the motorized advance. Both the "A" and "B" were manufactured with mixed welded and bolted construction, except for the very early Model A's, which were all bolted. There are, of course, other simple recognition methods. The Models A and B had a two-piece nose plate, with top and bottom plates angling back from a horizonal edge in the center. The late Model A's and all B's were equipped with turn signals of the "wig-wag" type;these were mounted on the armored sides, immediately in front of the driver's and commander's visor plates. These turn signals were moved or deleted on later models. An additional recognition feature is the ventilation doors made of armor plate that were on both sides of the engine compartment. These doors are prominent features on the Models A, B, and very early C's of the Sd. Kfz. 251.

The Hanomag armored infantry vehicle was arranged so as to best seat an infantry "gruppe" (or squad) seated on two parallel benches that lined both sides of the vehicle. The driver sat at the forward part of the compartment on the left side, while the commander or radio operator sat on the right side. There was an isle provided between the two rows of seats for access. Incidently, the infantrymen sat facing inward. Entry to the vehicle was gained by means of a double door arrangement at the rear, these doors consisted of two angular pieces of armor plate, assembled at an angle to correspond to the shape of the rest of the vehicle. This necessitated a rather complicated hinge arrangement, which, coupled with construction difficulties with the doors, slowed production of the armored bodies.

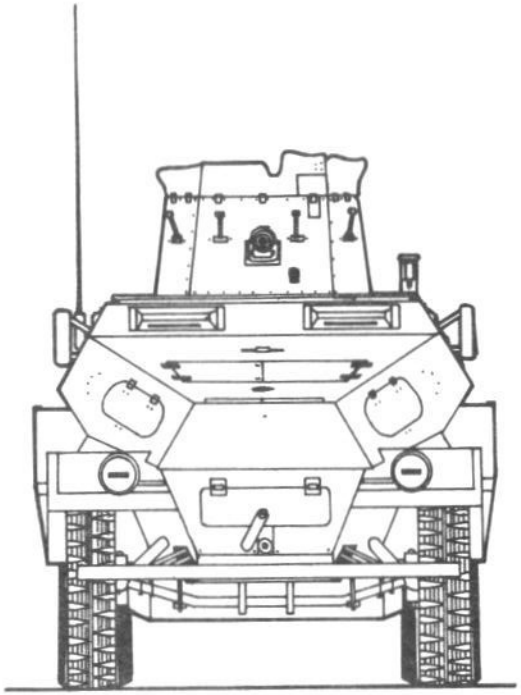
Hull Front, Sd. Kfz. 251. Ausführung A.-B.

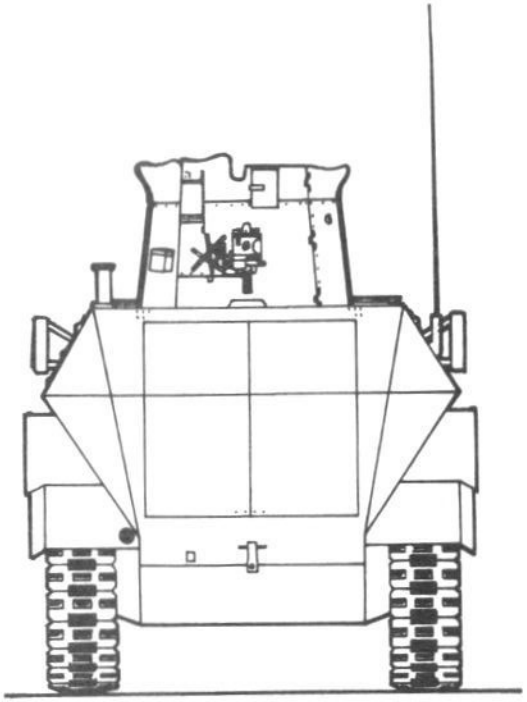

WH-164241
Radiator Supplemental Cooling Vent
Tubular Front Bumper Support
Cover for Hand Starter Crank Access

There were eight different varients of the Ausführung A and B; in general, these were vehicles developed for special uses. These were designated by arabic numbers following and separated from the Sd. Kfz. number by a 'slash' bar. The first of these special varients was the Sd. Kfz. 251/1, which was the basic infantry personnel carrier, already described. The second varient, the Sd. Kfz. 251/2, was a vehicle designed to serve as a carrier for the 81mm mortar and crew. The mortar was fastened to the floor of the vehicle, and it could fire forward; the forward MG-34 and armored shield were removed to give a better field of fire. This version carried a crew of eight and a supply of ammunition. The mortar could be dismounted, if necessary, for firing from the ground. The third special version of the '251' was the '-/3', which was designated as a radio vehicle. It came in a number of different sub-varients, depending upon the types of signal equipment installed. The first models of this vehicle were equipped with a folding frame-type antenna that resembled the framework of an old bed suspended over the top of the crew compartment. In later versions, this early style antenna was replaced by two or three of the vertical whip-type antennas, for two reasons. First, the early style antenna was too highly visible, and attracted fire from the enemy, who seemed always prone to knocking-off signal crews. The second reason was for simplicity of manufacture; the whips were constructed from thin tubing. The radio vehicle carried a crew of seven to nine men depending upon the level of command. Quite often, these vehicles were used as "command" vehicles by general officers, who commanded their units by radio.



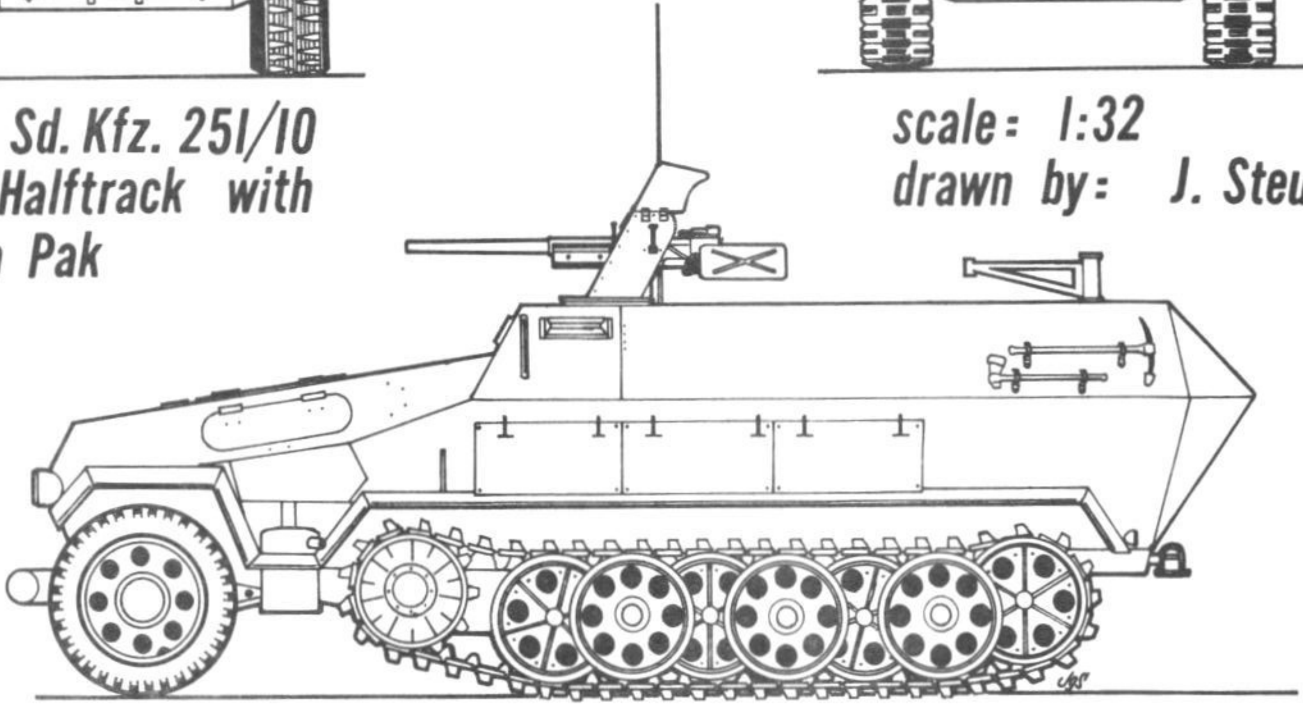
The next vehicle in the special series was the Sd. Kfz. 251/4, which was the crew vehicle that towed the "light infantry gun", a 75mm howitzer that was available to motorized infantry units for immediate support. It carried a crew of seven, the aiming stakes and gun paraphernalia, and an adequate supply of ammunition for the towed gun. The Sd. Kfz. 251/5 was an Engineer vehicle (Pionier-SPW) which carried an engineer squad with all necessary tools and equipment. The Sd. Kfz. 251/6 was a "command" vehicle, carrying the radio equipment, map table and other necessary materials for the operational quarters for Battalion or Regimental Headquarters staffs. There does not appear to have been very many of the '251/6' vehicles produced, and most headquarters staffs used a normal '251/1' for the headquarters vehicle. The last version of the Ausführung B. to be produced was the Sd. Kfz. 251/10, which is illustrated in our three-view drawing. It was used as an armored-infantry platoon leader's vehicle until 1942.





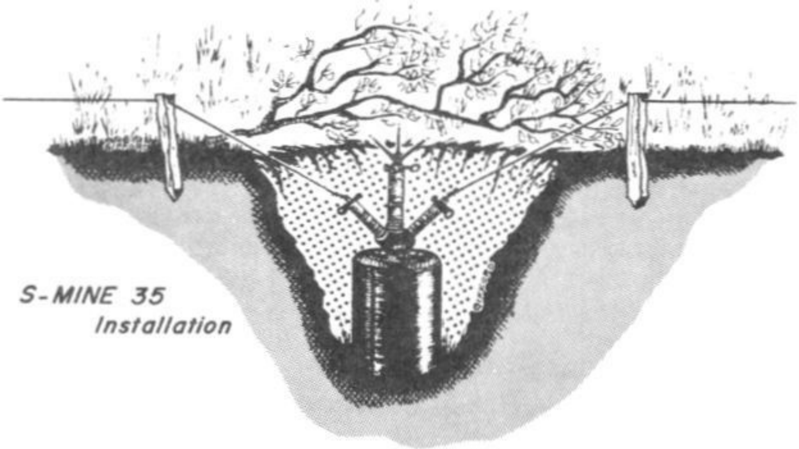
Hanomag Sd. Kfz. 251/10
Armored Halftrack with
3.7cm Pak

scale: 1:32
drawn by: J. Steuard



German Land Mines, and Allied Countermeasures

by Carl Dembrowski



S-MINE 35 Installation

Land mines, one of the most efficient and economical weapons of harassment for an army on the defensive, were employed both widely and skillfully by the Germans througl out their long retreat from El Alamein and Stalingrad to the outskirts of Berlin, Practical as either anti-personnel or anti-vehicular devices, land mines were also used to a lesser extent by the Japanese in their defense of beachheads and jungle paths. Because the enemy constantly varied their mining tactics, the detection and clearance of minefields continued to be one of the most critical problems confronting Allied ground forces.

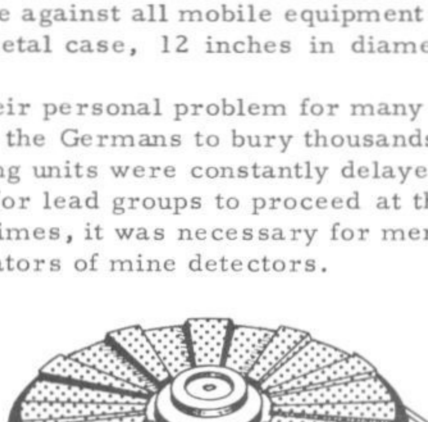
Mine warfare was technological warfare, as well as having psychological implications for opposing ground forces. To lay one mine or a hundred in a few minutes required no complicated apparatus, but to detect and deactivate a mine in the black of night, often in the face of direct fire, required a highly sensative method of detection, a great amount of careful spade work, and an unlimited amount of guts. At time, especially during the Italian campaign, German land mines reduced the Allied advance to a slow snail's pace.

Mine warfare had it's first inception in the first world war. The Germans had introduced land mines as a countermeasure against the British tanks. To stop tanks, the Germans buried metal casings full of explosives which were activated by the passage of a heavy vehicle. The British countered this by developing a mine detector which utilized magnetic attraction to locate a buried metal object. Until the detector was ready for field use, ground troops had to probe the terrain ahead of them with bayonets to determine whether or not a proposed route was safe for tanks. Rather costly for Allied ground troops, but these mines weren't used to any great extent, fortunately.

All of the major powers, except for the United States, had fairly reliable metallic mine detectors at the onset of World War II., and the Germans had a highly efficient Tellermine, which was more than an antitank device, since it was equally effective against all mobile equipment from heavy tanks to jeeps. The Tellermine was a pancake-shaped metal case, 12 inches in diameter, and 2 inches thick, which contained 12 pounds of explosives.

After El Alamein, the British had the Tellermine as their personal problem for many months. The loose sands of the Libyan Desert made it possible for the Germans to bury thousands upon thousands of Tellermines with little effort, and British pursuing units were constantly delayed by having to locate and deactivate them. Often, it was necessary for lead groups to proceed at their own risk, and leave the mine detection to rear units. At other times, it was necessary for men with bayonets to supplement the time-consuming efforts of the operators of mine detectors.

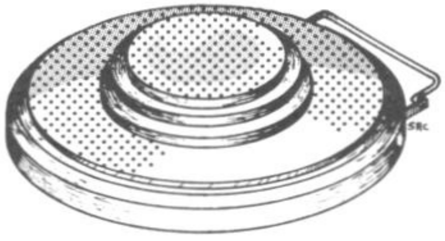
While the metallic mine detectors spotted Tellermines, the tops of which were usually about six inches below the ground, they also registered a response to all types of buried metal objects. Because of this, the detector operator and his coworker spent more than half of their time carefully digging-up metal buttons, tin cans, broken knife blades, gas mask cannisters, empty shell casings, mess tins, helmets................ Using the sensativity of the mine detectors to their own advantage, the Germans began to arrange their mines so that the removal of a harmless-looking tin can would detonate a mine buried further underground, and any unwarranted movement of one mine



TELLERMINE 35

would set off another one close by. The Germans would also bury some mines too deep for immediate detection or detonation, and these would become unsuspected hazards after passing convoys had worn away the earth above them.

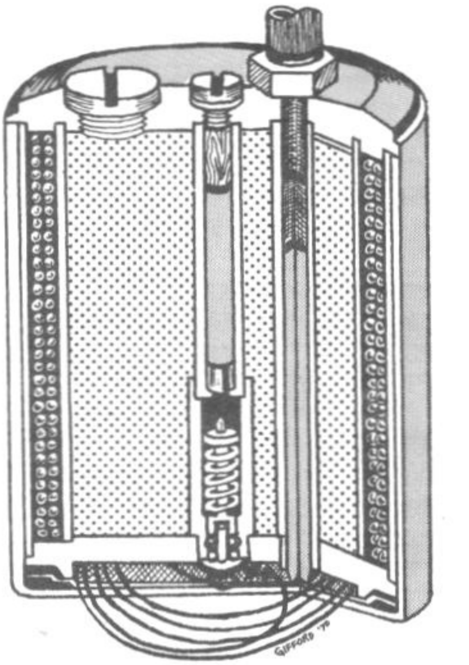
A half-mile a day was optimum progress for a two man detector team, and often they progressed much slower, because the Germans blanketed mine fields with pre-arranged fires. As a result, the British turned to concentrated artillery fire in specific areas, and obsolete tanks were employed to set off any hidden mines. However, it was necessary to choose between a rapid advance with heavy losses, or slow progress in comparative safety.


TELLERMINE 43

The infantry were relatively untroubled by land mines until the German "S" mine, or "Bouncing Betty", described by an Allied officer as "the deadliest mine ever invented" was introduced. The S mine, an anti-personnel weapon, had a cylindrical metal casing full of hundreds of small steel pellets, and was set off by a man's weight, or by concealed trip wires. It was also highly effective as a booby trap.

Instead of exploding underground like most mines, thereby allowing the ground to absorb much of the explosive force, the S mine, only three inches in diameter, was projected waist-high into the air by a small charge, and it went off in a position calculated to inflict widespread casualties. A misstep by one infantryman could easily bring death to a dozen nearby comrades. The only defense, once the mine was sprung, was to "hit the dirt" before the container of pellets jumped into position to explode. At first the foot soldier, feeling the snap of the spring beneath his foot, had about three seconds to take cover, but the German technicians gradually reduced the time to less than a second.

Since the S mine was largely metallic in content, although much smaller than the Tellermine, it could be detected by standard mine detectors. When large fields of S mines were discovered and clearance time was limited, tanks or heavy trucks were used to detonate the mines ahead of the infantry. The S mines could not damage an armored vehicle, but Germans countered this by interspersing Tellermines with the S mines, thereby making it hazardous for vehicles and infantry to pass through a mined area.


S-MINE 44

The United States used a mine detector called the SCR-625, of which over 100,000 were produced by war's end. It had two transmitting search coils energized by a 1000-cycle oscillator. The receiving coil, which at balance had no current output, was coupled to a multi-stage amplifier. The output of the amplifier actuated a visible meter and also produced an audible signal in earphones, thereby making the detector practible for both day and night use. The search-coil arrangement was wound on a flat cylindrical wooden form, which was attached to a demountable handle. The indicating meter was mounted on the handle Electrical leads passed to the amplifier and the battery supply, which was carried in a pack on the operator's back.

Magnetic materials, such as buried metallic mines, produced a visible and audible response in the detector because the magnetic disturbance of the mutual inductance field changed the coupling between the coils. Non-magnetic conductors could also be detected as a result of the eddy-current losses induced by the alternating magnetic field. To locate a mine, the cylindrical search-coil disk was swept back and forth over the ground at a height of six to eight inches. A detection signal was given when a buried metal object came within the field of the search coil and a maximum signal was produced when the coils were directly over the hidden object.

Under stable soil conditions, the SCR-625 detector would locate a Tellermine at a depth of two feet, and a S mine at somewhat shorter distances. The instrument performed nobly during the African campaign but a major drawback in its design became evident when the war shifted to Italy.

Continued on Page 29

ARMOURED FORMATIONS OF THE BRITISH ARMY

1st Armoured Division - 1938-1940

by Bill Platz

1ST ARMOURED DIVISION
1939-42
WHITE RHINO ENCLOSED BY A WHITE OVAL BAND, BACKGROUND IS VEHICLE'S COLOR

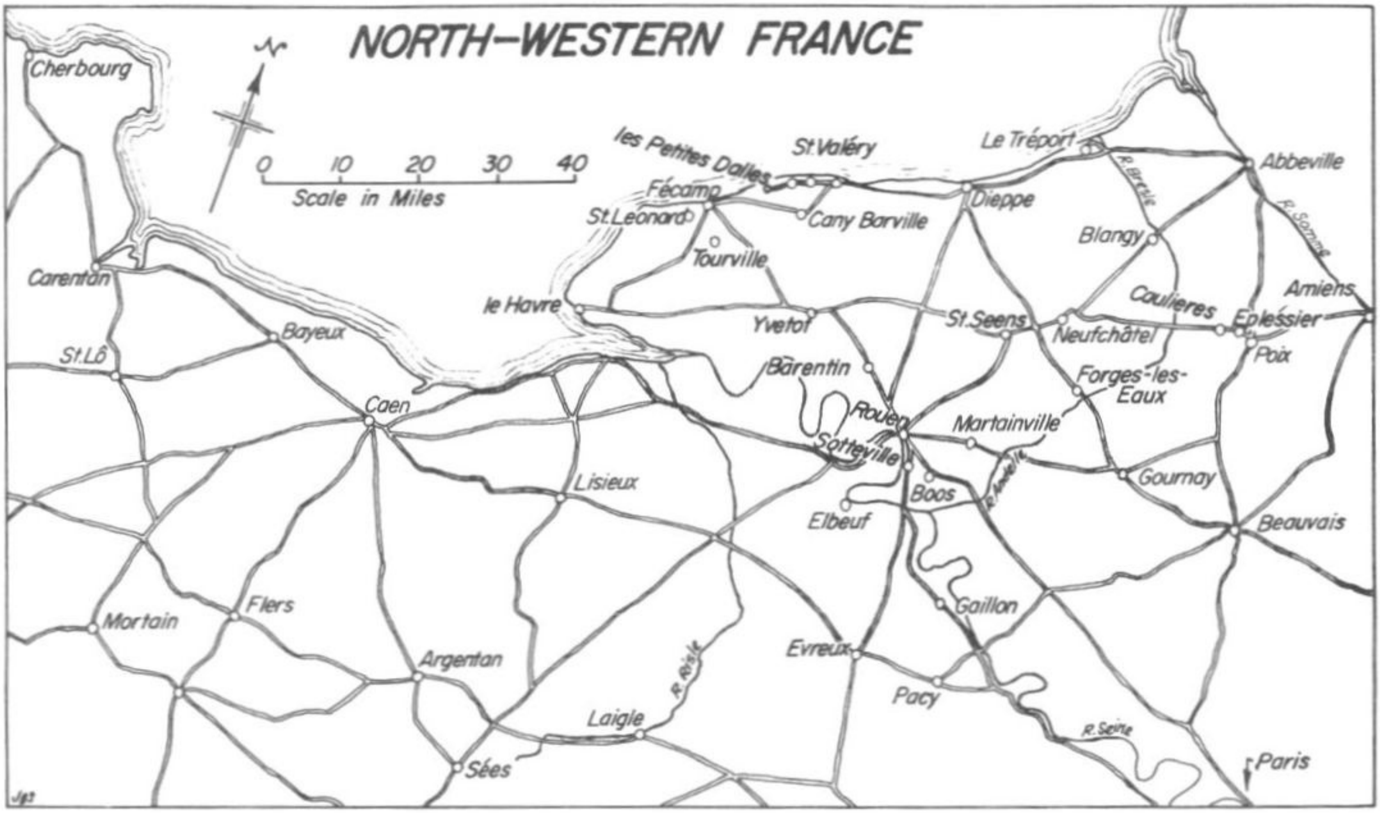
After extensive maneuvers in 1936 and 1937, the 1st Armoured Division was formed in 1938 from the "Mobile Division" and the 1st Tank Brigade; however, it was a division in name only, having almost no modern equipment, and consisting of one Heavy and two Light Armoured Brigades with a small Support Group. Both of the Light Brigades were formed from cavalry units whose horses had recently been replaced by Mark VI. Light Tanks, and generally the transition had not been smooth. The case of the 3rd Hussars is typical. The 3rd was "mechanized" in early 1936, however the first tank did not arrive until 1937, and then only enough were received to equip one troop. It was not until the Spring of 1939 that the regiment received its full complement of 52 Mark VIB's. The Heavy Brigade was a little better off. It consisted of three Battalions of the Royal Tank Regiment equipped with three companies of seven Light and five Medium Tanks each. Unfortunately, the medium tanks were the 1924 Mark II's with a maximum armour of only 8 mm, and of these, only a total of 156 had been produced.

In 1939, the division was reorganized into two Armoured Brigades; one Heavy and one Light. These were re-equipped with the new A9 and A13 Cruisers as replacements for the old Mark II's. The process of re-equipping was followed by a period of intensive training which was interrupted when the division joined the Expeditionary Force in May 1940.

When the division sailed for France, it was already under strength, the victim of earlier detachments for the B.E.F. and the ill-fated Norway operation. The division headquarters and the 1st Support Group, consisting of the 101st Light AA/ATk Regiment and service troops, arrived on the continent on May 20, 1940; and with 2nd Armoured Brigade moved to the tank training area near Pacy, France. The 3rd Armoured Brigade landed at Cherbourg on May 25th, and within a week the entire force was in combat.

Meanwhile, further to the north, elements of the division were already in the thick of the fighting. On May 22nd, the 30th Infantry Brigade, formed from the two Motor Battalions of the 1st Support Group, was landed at the port of Calais to secure its facilities for the retreating B.E.F., hard pressed by the German panzers. 1st Armoured Division was also represented by Lt. Col. R.C. Keller's 3rd Battalion of the Royal Tank Regiment (3rd RTR), which landed its Cruisers and Mark VI. Light tanks on the evening of May 22nd. The next day, the tanks advanced inland and ran into a column from XLI. Panzer-Korps, losing 12 tanks in the encounter. Keller then withdrew to the outskirts of the port and took up defensive positions - a wise move in the face of three Panzer- divisions. While the armour was thus engaged, the 2nd Battalion, Kings Royal Rifle Corps, and the 1st Battalion, The Rifle Brigade, along with the 1st Battalion, Queen Victoria's Rifles (a motorcycle battalion from the London division), were busy preparing the Calais defenses. Although 1st Panzer Division passed northwest of the town and advanced on Gravelines and the crossings of the Aa River, the Germans failed to launch an attack on the port on May 23rd.

At 2300 that night, an attempt was made to pass a column of supplies north to the troops at Dunkirk. The convoy was to be escorted by 3rd RTR and elements of 1st Rifle Brigade, and at the appointed hour, Major W.R. Reeves with the remnants of B Squadron, 3rd RTR (one A13 and three Mark VI Light tanks) set off to find a way through the lines. The moon provided enough light to make driving possible, and ambush likely as the tanks moved out, and the uneasiness felt by the crews was not helped by the discovery that the radio link to Battalion had been lost. At about 2330, the leading Mk. VI. halted a few yards short of where a dark mass blocked the road. Examination revealed that the block, consisting of two derelict trucks towed across the roadway, was undefended, and the column moved on, passing two further blocks with no opposition. A bit further on, the lead tank again stopped to talk to a group of French soldiers; however, Major Reeves noted that the "Frenchmen" were wearing German uniforms, and he ordered the column forward before the footsloggers discovered the identity of the "friendly" tanks. Waved-on by the rear echelons of the Panzers, Reeves continued on his way between the resting lines of German troops, and arrived in Gravelines shortly before dawn. The next day, Reeves' four tanks were there to greet the German attack, and the single A13 accounted for five enemy tanks and two halftracks before the Germans



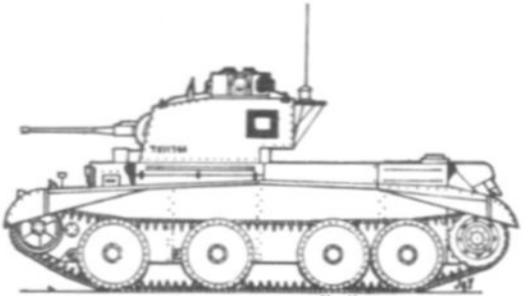
halted their assault. Major Reeves was awarded the Distinguished Service Order for his actions.

Unfortunately, the rest of the convoy was unable to get through behind B Squadron, as all of the Germans were not asleep; and the next day was spent in repelling attacks on Calais itself. On May 26th, Calais surrendered after the 10th Panzer-Division broke into the city.

South of the Somme River, Major General Roger Evans was moving his division up to attack the German bridgeheads across that strategic waterway. On May 27th, the division's two tank brigades, under command of 10th French Army, led assaults on the German positions south of Abbeville, supported by the French 2nd, 3rd and 5th Light Cavalry Divisions. After some initial success, the advance was halted due to lack of infantry support - the division's two Motor Battalions having been sent to Calais, and the accompanying French units failing to keep up with the armour. The 2nd Armoured Brigade suffered heavy casualties in these attacks, and the division was ordered south to refit near Rouen, leaving the depleted 2nd Brigade to provide support for the 51st Infantry Division.

On June 5th, the Panzer-Divisions began the conquest of the French heartland. Rommel's 7th Panzer-Division broke through the French line between Amiens and Abbeville, and drove south toward the Seine near Rouen. Opposing him were the remaining tanks of 1st Armoured based at Gournay on the highway between Dieppe and Paris. This force, under Brigadier Crocker of the 3rd Armoured Brigade could muster 43 Cruisers (A9, A10 and A13), 42 Mk. VI. Lights, and 7 "Matildas" Infantry tanks (scrounged from the replacements for 1st Army Tank Brigade, already evacuated from Dunkirk). On the afternoon of June 7th, 1st Armoured Division patrols made contact with 7th Panzer-Division moving southwest to the crossings at Elbeuf, while further to the north, the 1st Support Group was overrun. This unit had only a few 2-pounder Anti-Tank guns and obsolete Lewis machine guns in its 101st LAA/ATk Regiment, and it was easy prey for the German armour.

The tanks, however, were not engaged heavily, and Brigadier Crocker deployed his armour to cover the crossings of the Andelle River. The next morning, the Germans found an unguarded ford southeast of Sigy, and once again advanced on the Seine crossings and Rouen. Outflanked again, 1st Armoured Division withdrew to the south, heading for the bridges across the Seine at Les Andelys. The German and British tanks crossed each other's route among countless French refugees, and both forces arrived at the river at about the same time. Separated by several miles, yet, with the exception of a few skirmishes by the rear units, they did not meet. For the next several days, the 2nd and 3rd Armoured Brigades, reduced to between 20 and 30 tanks each, alternated in support of the infantry of the French 10th Army; but the end was near, and on June 14th, 7th Panzer-Division slipped through a gap on the right flank and began a drive westward to Cherbourg. Early on the 16th of June, 2nd Armoured Brigade and "B" echelon troops were ordered to Brest for evacuation, and they arrived at the docks there late that night. 3rd Armoured Brigade, with 29 operational tanks, was to retire to Cherbourg. And so the race began........ Through Mortain, St. Lo, and Lessay, the British tanks pushed for the port of Cherbourg, patching-up those vehicles that could be saved, and burning those that could not, while watching over their shoulders for the oncoming Germans. Rommel too, was driving across the Normandy countryside past Argentan to Coutances, and then on to Lessay--missing the 3rd Brigade by only a few hours, on the evening of the 17th. But, 7th Panzer-Division was too late. During the morning of the 18th, the 26 tanks of the 3rd Armoured Brigade; 14 A13's and 12 Mk. VI. Lights, were loaded aboard waiting ships, and departed for England.


A13 Cruiser Tank of "B" Squadron, 3rd Battalion, Royal Tank Regiment, commanded by Major W.R.Reeves

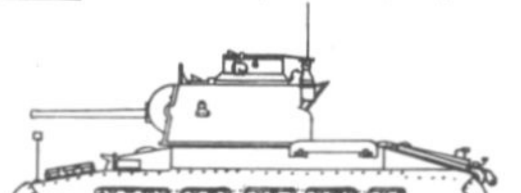
On their arrival, the division was assigned to Southern Command, with the other units of the B.E.F. They immediately began sorting themselves out. First priority was the re-equipping of the depleted units, and slowly the division was brought back up to strength, with a hodgepodge of available equipment. The old Cruiser and Light tanks were joined by "Tetrarchs" (Mark VII. Light tanks) and "Covenanters" (Cruiser Mark V.) which were now coming off the production lines. In August, Major General Evans was relieved by Major General C. W. M. Norris, who would command the division for the next year. At the same time, the 11th Royal Horse Artillery arrived with their 25-pounder field guns to form the artillery contingent of the 1st Support Group. For the first time since October 1939, the division had artillery attached.

Things were still looking dark, however, as the threat of German invasion remained, and the Italians advanced across the Egyptian border. Within a month of taking command, General Norris lost the 3rd Armoured Brigade to the 2nd Armoured Division which was preparing to embark for Egypt. (See AFV-G2, Vol. II. No. 3 of June 1970 for the story of 2nd Armoured Division) The loss of Crocker's veterans, now commanded by Brigadier R. G. W. Rimington, was only partly compensated for by the addition of the 22nd Armoured Brigade, a formation made up of three Yeomanry Regiments of the Territorial Army (2nd Royal Gloucestershire Hussars, 3rd County of London Yeomanry, and 4th County of London Yeomanry) and the 2nd Battalion, Kings Royal Rifle Corps reconstituted after Calais.

In October, the War Office ordered a reorganization of British Armoured Divisions, based on the experiences gained in France. Each of the two Armoured Brigades received a Motor Infantry Battalion, while a third Infantry Battalion (Lorried) was added to the Support Group. (1st Support Group did not receive the 9th Battalion, Sherwood Foresters until January of 1941) By the same order, an Armoured Car Regiment was added to the Divisional troops, as was an additional Engineer Field Squadron and a Field Park Squadron. The combined Light AA/ATk Regiment was also replaced by separate regiments of Anti-tank guns and Bofors Anti-aircraft guns.

During the next Spring and Summer, the Division was assigned to G.H.Q. Home Forces, while it grew accustomed to the new organization and equipment.

In North Africa, however, the Axis were again threatening the Suez, after recovering from their reverses of December. Rommel was besieging Tobruk, and only new armoured formations could preserve the situation for the Allies. In August 1941, the 1st Armoured Division passed to War Office control, and the first elements began the long trip around the Cape of Good Hope to Egypt. The first to leave were the 22nd Armoured Brigade with their new "Crusader" tanks. They were followed in September by the Support Group and in October by the 2nd Armoured Brigade. Next month, the Desert Campaign.



Infantry Tank Mk.II. "Matilda" used by 3rd. Armoured Brigade in June 1940.

Wargame Conversions:

M32B3 ARV

by Jim Garrison

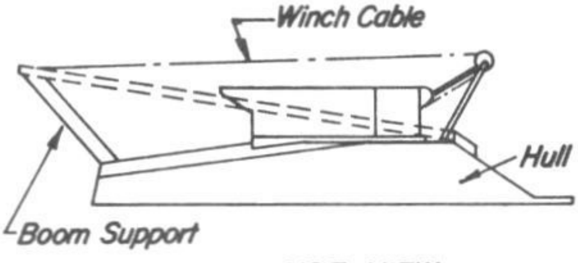
In an armored engagement, both sides tend to have excessive numbers of tanks knocked-out. These tanks can generally be made serviceable by recovery crews in the field. To start repairs as soon as possible, and to keep the enemy from demolishing knocked-out vehicles, the Armored Recovery Vehicle (or ARV) was developed. With these vehicles, it was possible to extract the damaged vehicles from combat while the battle raged on. In many cases, it was possible for a tank to reappear in a battle where it had already be knocked-out in.

All of the tank armies developed ARV's by the end of World War II. In general, these ARV's were their standard medium tank chassis' plus special equipment for recovery of damaged tanks. The most plentiful ARV in American service was the M32B3, since it was built on the M4A3 tank chassis, which was found in greater numbers in the U.S. Army than any other single type.

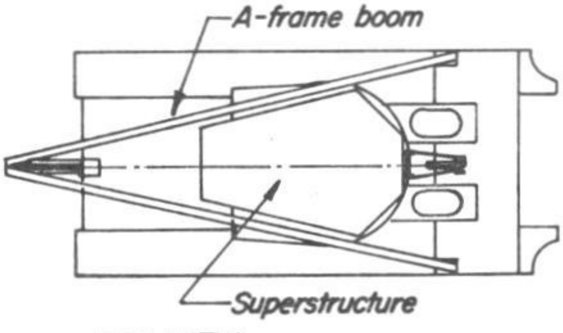
The M32's were built on the chassis of M4 Shermans that had already served in combat and had been sent back to Detroit for installation of newer equipment. Because this method of production was used, there were many variations of each single sub-type of M32. But all M32's were fitted with a winch, with a capacity of 60,000 lbs., an 18-foot A-frame boom, and a fixed superstructure in place of the turret.

For the M32B3 model described below, I used ROCO's Z-202, the M4A3, which they call an M4A4. Airfix's M4 may be used if you want the M32 in a slightly larger scale. At first, this model appears complicated, but if taken in sections, construction is very simple. The superstructure is composed of nine pieces: the top, bottom, front, front angled sides (2), the rear angled sides (2), and the two pieces that comprise the rear. See the drawing below. First, the front and the front angled sides are cemented to the bottom piece, followed by the rear angled sides, and then the two angled rear pieces. For the roof (or top), I glued a piece of sheet styrene over the other assembled plates, and trimmed off the excess after the glue had set. My superstructure was made from .010 sheet styrene. Finish the superstructure by adding the port for the cables, as shown in the drawings. The commander's hatch may be removed from the turret and added to the rear of the superstructure roof. For the front beam that is used to raise the A-frame boom by a cable (shown in alternating long and short lines below), a section of a small "H" beam made by Plastruct may be used, installed as shown in the side view. A small piece of the same "H" beam may be used for the rear boom support. The A-frame boom was made from two pieces of 1/16th inch Plastruct round tubing about 2-1/4 inches long. Take your time and use care in fitting these parts; they may take a little more than usual time. Thin thread may be used for the lifting cable and winch cable. To finish the conversion, I detailed my M32's with parts from the ROCO M-88 Recovery Vehicle (Z-232), and Airfix's M4 Sherman. However, this is not absolutely necessary, and may be rather expensive.

Accompany your M32B3's into combat with a Maintenance truck (Z-146) and a couple of 3/4-ton trucks (Z-225) to carry the rest of the ordnance crew. Generally, damaged tanks were recovered and towed to a central location where the trucks were hidden under camouflage netting. After the arrival of the damaged tank, the ordnance crew rapidly set to work repairing the broken parts. The A-frame boom could be used to exchange engine packages, remove damaged gun tubes, and many other useful tasks.



SIDE VIEW



TOP VIEW

Color 'n Camouflage

by Norb Meyer & Jim Steuard

The German Kfz. 1/20 Volkswagen 'Schwimmwagen' in Russia

The unique Volkswagen Type 166, commonly refered to as the 'Schwimmwagen', was first produced in 1942. This vehicle was a light-weight, fully amphibious, four-wheel drive car that could 'go anywhere'. It was designed as a replacement for the motorcycles that were in use in Kradschützen reconnaissance units. During its' initial service in Russia, it was called the Kradschützen-Ersatzwagen, or motorcycle replacement vehicle. The priority for these useful vehicles was high, and most of the initial models went into the combat on the Eastern Front. It was not until late 1943 that units in the west began to be equipped with the popular vehicle. Over 14,000 of the 'Swimmers' were produced, until production was phased out in late 1944. There were a number of problem areas with the vehicle, including the complexity of the drive and self-lubricating mechanism, however, the vehicle satisfied a great need in the Wehrmacht for increased mobility.

GERMAN DARK GREEN
CAMOUFLAGE
Floquil M46 Dark Green

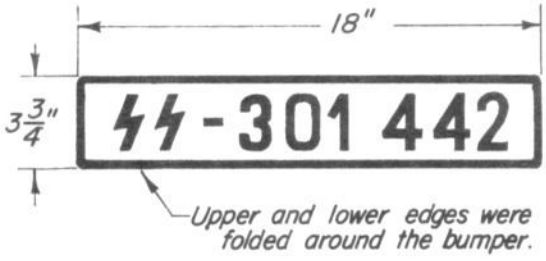
🟩

Our particular subject for this month's article was a 'Schwimmwagen' assigned to the 2. Kompanie of SS-Aufklärungs-Abteilung (or SS Reconnaissance Battalion) "Das Reich" in the Spring and Summer of 1942. The 2nd company had received the amphibious vehicles as replacements for their BMW motorcycles with sidecars, and the men were enthusiastic about the new cars. Our vehicle was among the very first to be received.

Most of the 'Schwimmwagens' that were used in Russia were painted an overall coat of dark green, for camouflage purposes, and our vehicle was no exception. The paint that was used was the standard dark green camouflage paint common in the Wehrmacht, and it is displayed in this month's paint chip, in the pure un-bleached color. This color would lighten under the bright summer sun, and would be somewhat lighter on the upper surfaces, for those readers who might wish to model this vehicle.

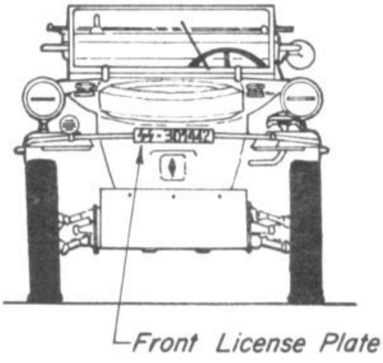
The camouflage finish of our particular vehicle was specially augmented with a large number of branches and leaves draped over the vehicle to break up its' outline. This practice was common in reconn units to prevent the enemy from identifying the vehicle from the local folage.

The first of the insignia applied to our 'Schwimmwagen' was the license plates that were common to all vehicles in the Wehrmacht. These plates were fastened to both front and rear of the vehicle. They were manufactured from thin stamped aluminum, with embossed letters and numbers. The numerals and letters appeared in black on a white background; there was a thin black outside edge to the plates. All of the early 'Schwimmwagens' that were supplied to the Waffen-SS were licensed in the 300000 number range; our vehicle had the license number shown above. The two small SS 'runes' identified the vehicles (and license plates) issued to the Waffen-SS.



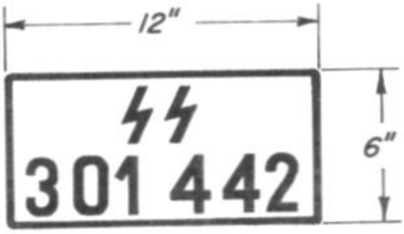
Front License Plate

The front license plates that were attached to the Kfz. 1/20 were approximately 18 inches in length and 3-3/4 inches in height, and it carried the numerals and 'runes' in a single line. Since it was difficult to fasten these plates to the front of the 'Swimmer', and since the extended front 'bumper' of the vehicle suffered numerous bumps, the front license plate soon became bent around the small plate on the bumper that was meant to hold it. The small front-view of the Kfz. 1/20 will show the location of the front plate.



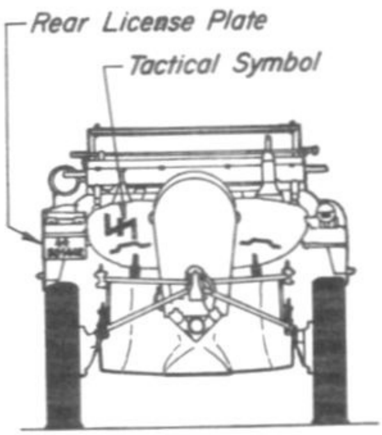
The rear license plate differed from that on the front, in that it was manufactured with the letters ('runes') and numbers in two rows, one above the other. These plates for 'Schwimmwagens' were smaller than the standard rear plates for other vehicles; they measured approximately 12 inches wide and 6 inches high. They were fastened to the base plate that was provided on the left rear fender. There were two such brackets provided; one on the left and the other on the right of the vehicle's rear. The one on the right rear was not used to any extent. The rear-view of the Kfz. 1/20 will indicate the location of the rear license plate on our particular vehicle.

At the time that the reference photos were taken of the Kfz. 1/20 in service with "Das Reich", no small unit tactical markings were displayed, possibly because no definite marking had been evolved for the amphibious reconn units. The earlier 'motorcycle' emblem was not used on 'Schwimmwagens'.



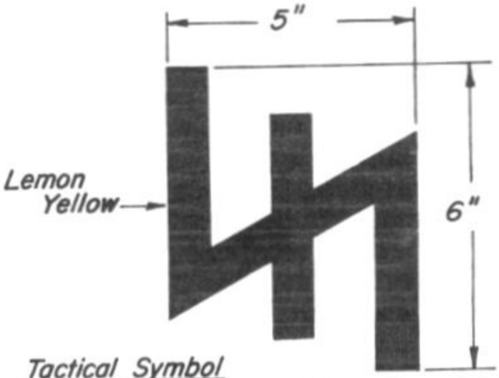
Rear License Plate

The tactical marking that was chosen by SS-Division "Das Reich" in 1941 was displayed on the rear of the 'Schwimmwagens'. This marking consisted of a 'Wolfsangle' (a runic symbol) in lemon-yellow-gold. The 'Wolfsangle' resembles an elongated single 'rune' with a short single vertical bar in the center, as illustrated below. This runic symbol was approximately 5 inches wide and 6 inches high; the bars were less than one inch in thickness. This runic symbol was painted on the rear deck of the Kfz. 1/20 on the left side, in almost the only clear space that was large enough. This is illustrated in the rear-view that appears to the left.



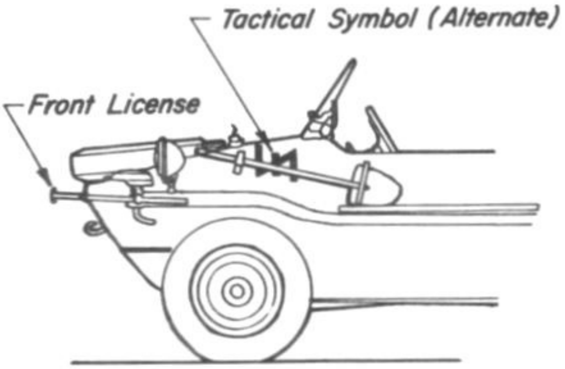
There was an alternate, or second, location on the 'Schwimmwagens' of SS-Aufklärungs-Abteilung "Das Reich" where the divisional tactical symbol was displayed. This location was on the sides of the vehicle, forward of the crew compartment. It appears that the symbol was painted on both sides of the vehicle in identical areas, however, our photographs illustrate only the vehicle's left side, where the marking was partially obscured by the shovel which was carried in two brackets. These side markings took the place of the normal front tactical marking; there was little available room on the front of the 'Schwimmwagen' for tactical markings of any type.

When the 'Swimmers' were delivered to units in the field, they had a rectangular decal applied on the left side of the vehicle next to the driver's position. This decal identified the vehicle and mentioned that it was a four-wheel drive vehicle that required special instructions prior to correct operation. This decal was painted over by the Waffen-SS men of 'Das Reich', but its' location should be mentioned, for it appeared on all vehicles that were in the original primer paint finish.



Tactical Symbol
ϟϟ-Panzergrenadier-Division „Das Reich"

SS-Aufklärungs-Abteilung "Das Reich", in company with its parent division, was relieved from combat in Russia following the bitter fighting in the Winter of 1941-42. All units were rebuilt and brought up to strength at manuever grounds in Germany, where the division was officially redesignated as SS-Panzergrenadier-Division "Das Reich". In the late Spring of 1942, the division entrained for France, where it became a part of the SS-Panzer-Korps being formed there. The elements of the division participated in unit field problems and manuevers, in preparation for an expected invasion of France. In the late autumn of 1942, the SS-Panzer-Korps, consisting of SS Divisions "Das Reich", "Totenkopf" and "Leibstandarte-SS-Adolf Hitler", entrained for movement to the Eastern Front. The winter fighting at Charkov was to be the first heavy fighting for the reconstituted SS-Panzergrenadier Divisions, and the reconnaissance troops used their amphibious 'Schwimmwagen' vehicles to very good effect in the snow, as the rounded belly pan skidded through the depths with ease, and the SS men could easily skid stuck vehicles out of deep snow on the rounded belly. The vehicles were well liked by the SS men, who had to agree that they were much better than the drafty motorcycles that had no heaters.



The M-18 "Hellcat"

by Jim Garrison

Before the U.S. entered the Second World War, the US Army realized what value a tank destroyer could have. The first American tank destroyer was the T-12, which consisted of a "French 75" mounted on an M-3 Halftrack. These tank destroyers were stationed in the Philippines before the Japanese invasion.

It was realized that the T-12 was of temporary value. In December 1941, the Ordnance Department asked that a fast tank destroyer be developed. The Ordnance Department wanted the new vehicle to mount a 37mm gun on a Christie type suspension, and to be powered by a Wright Continental R-975 radial aircraft engine.

In the spring of 1942, the first of two prototypes was ready for testing. It had a 57mm M-1 gun for its main armament, and had a torsion bar suspension system, along with the recommended Wright engine. This prototype was designated as the T-49 Gun Motor Carriage (or GMC).

Tank Destroyer Command wanted more hitting power than the 57mm gun, and they asked that the second prototype be finished with an armament of the 75mm M-3 gun. This was designated as the T-67 Gun Motor Carriage, and it had the rounded, open-topped, sloped turret of the M-10 tank destroyer prototype (T-35). Tests by the Armored Vehicle Board showed the T-67 to have excellent performance, and the vehicle was recommended for standardization. In January 1943, the Tank Destroyer Command asked that the 76mm M-1 gun that was being developed for the T-23 Medium Tank series be mounted in their new tank destroyer. Six prototypes, armed with the 76.2mm gun, were built, being designated as the T-70. They had the same excellent performance as their predecessor, the T-67, and production was started in July of 1943.

The T-70's that came out of the Buick factory differed from the prototypes by having a new hull front and a new turret, with a combination counter-weight and storage box. In February 1944, the T-70 was standardized as the 76mm Gun Motor Carriage M-18. But in some units, they were known as the T-70 until the war's end. The name "Hellcat" was given to the M-18 in the field and was never adopted officially.

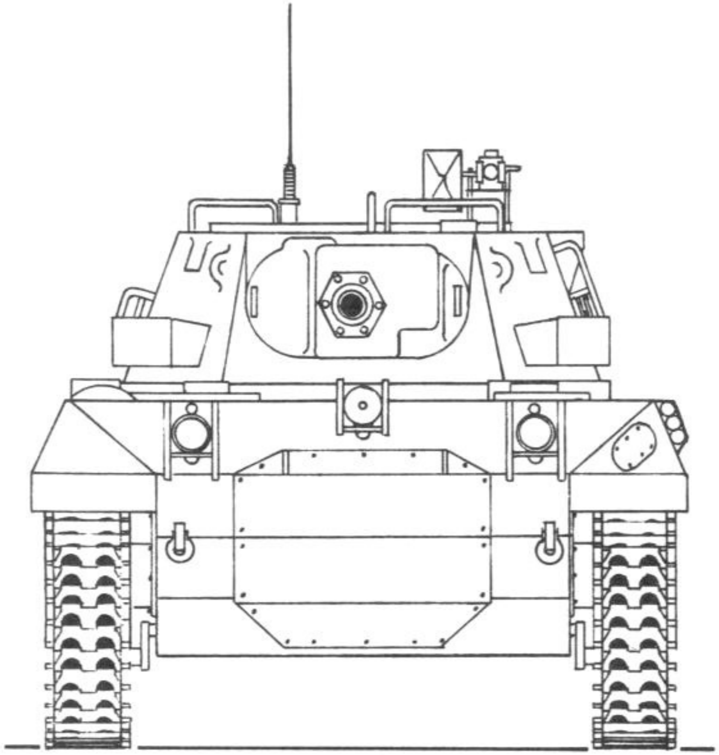
When M-18 production ended in October of 1944, 2,507 had been built. The M-18 was one of the most successful designs of the war. Fully loaded, it weighed less than 20 tons. This light combat weight of the "Hellcat", along with its torsion bar suspension and its 400 horsepower engine, allowed it to go in excess of 45 m.p.h. One source states that later vehicles were modified for better cross-country performance at the expense of the high road speed. While its armor was not of "Tiger" dimensions, the "Hellcat" had armor that was well sloped. The vehicle was a little over seven feet high (8.4 feet when the .50 caliber machine gun was mounted on its blister), which was low when compared to main battle tanks. While it was not as low as some German tank destroyers, its hard-hitting 76.2mm gun had the advantage of 360 degree traverse.

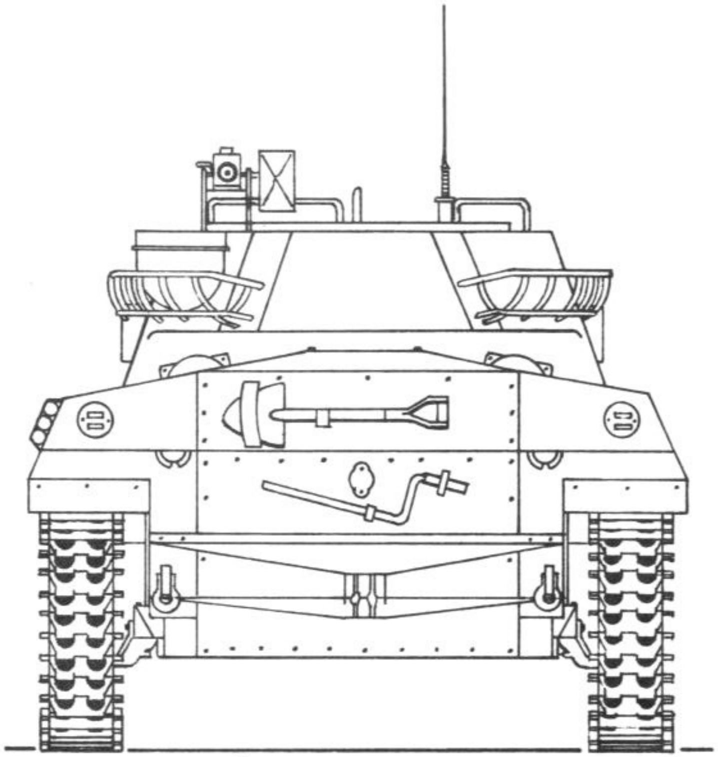
M-18's could be found in Italy, Northwest Europe, and in the Pacific theater. Tenth Army on Okinawa had "Hellcats" in its armored formations. Perhaps the most noteworthy "Hellcat" unit was the 705th Tank Destroyer Battalion, which participated in the defense of Bastogne in 1944/45.

As with all successful chassis, there were many variations built on the basic M-18. American ordnance men were able to mount the T-12 105mm howitzer in the "Hellcat" turret without extensive modification; this was designated as the T-88. The T-88 project was cancelled when the war ended. Two amphibious versions of the M-18 were developed, the T-86/T-86E1 and the T-87. The T-86 series had the 76mm M-1 gun, while the T-87 had the 105mm howitzer of the T-88 GMC. The T-87 was the most successful of the two, but again development was terminated at war's end.

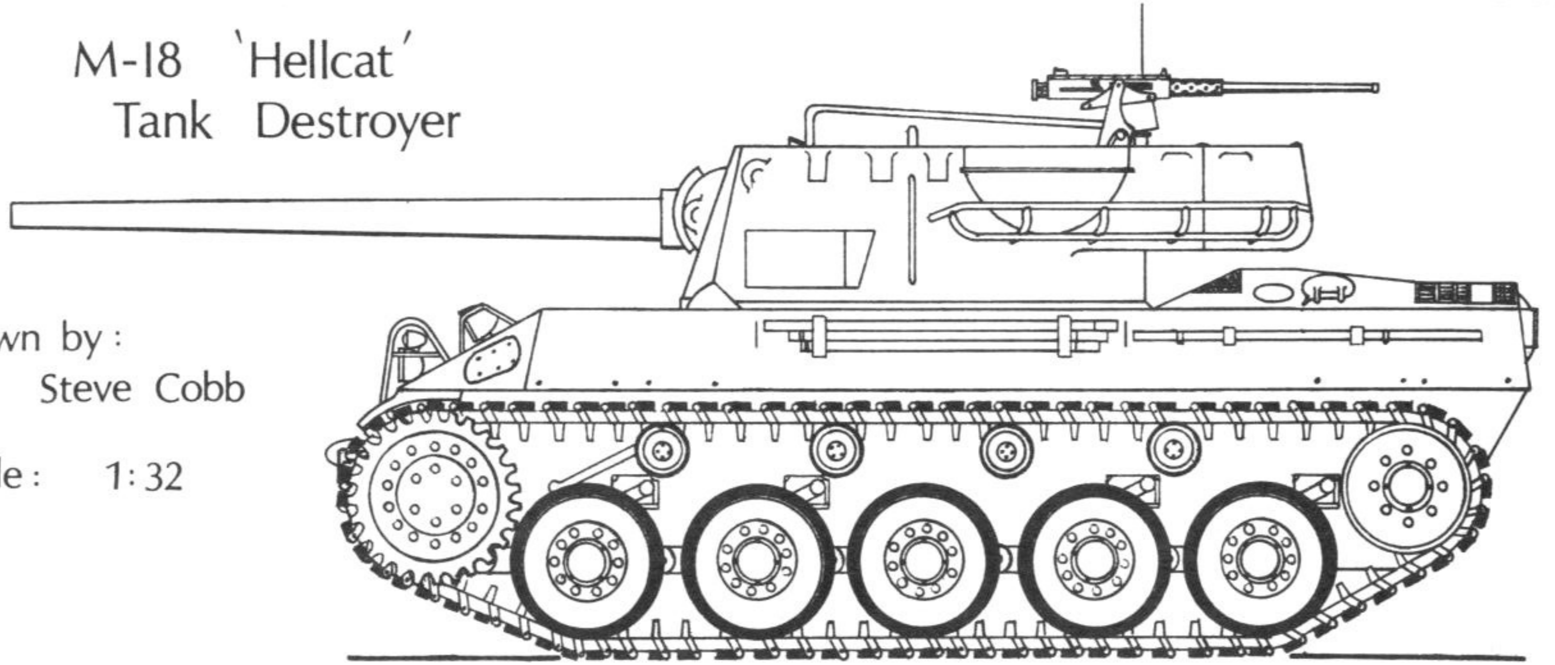
The only variation of the M-18 to see combat was the M-39. This vehicle was developed as the T-41 Prime Mover and the T-41E1 Reconnaissance Vehicle. Both vehicles were essentially M-18's with their turrets removed, and a small superstructure mounting a machine gun in its place The two vehicles differed only in their internal seating arrangement. In service, the M-39 Armored Utility Vehicle was also used as an Armored Personnel Carrier (or APC). In certain sources, the US Army claims that the M-39 APC had a maximum speed of 60 m.p.h. The M-39 was used by Armored Infantry Battalions of the US Army until 1952.

The M-18 "Hellcat" Tank Destroyer was well liked by the members of its crews. The vehicle was smaller and faster than other US tank destroyers; it made a more difficult target to hit in combat situations. The layout of the armor made the M-18 a more difficult vehicle to knock-out, in comparison with the M-10 or M-36 tank destroyers, which had thin armor and less speed.



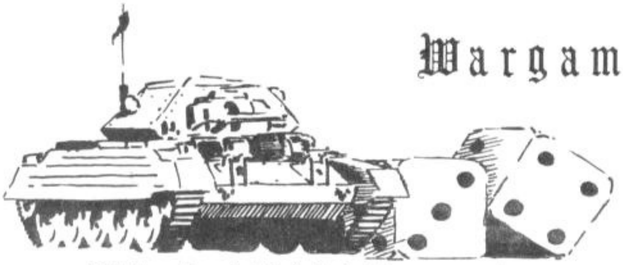


M-18 'Hellcat'
Tank Destroyer



Drawn by :
Steve Cobb

Scale : 1: 32



Wargame Review

Neither Rain, nor Sleet, nor Snow............

by Bill Platz

While the faithful letter carrier may not be hampered by the elements, the same cannot be said for those who plan and carry-out military operations. Indeed, weather is often the critical factor that determines victory or defeat for those best able to adapt to its conditions. Yet, although this is a fact that is apparent to anyone who has studied military history, few wargamers include climate in their tabletop confrontations. Weather can be introduced into any wargame situation, if a few basic principles are remembered, and the resulting game will prove far more realistic and a much greater challange to the players.

When writing weather rules, it is important to remember that the climate depends upon the time of year, the geographical area, and, to the frustration of meteorologists everywhere, an element of pure chance. At the same time, weather conditions do not change instantaneously, but shift gradually. Lastly, as with any rule, weather is added only to add realism to the basic game; it should not dominate play, but is should provide players with another factor to contend with; one that is present in actual military operations.

There now arises the problem of how to incorporate the effects of wind and rain onto a wargame board. For those of us who use a sand-table, this is less of a problem, since a garden hose can be used to simulate rain or mud. (This becomes a bit messy, however.) And, by issueing each player a large black cigar, it is possible to duplicate a very dense fog; but such measures are a little drastic, and should be reserved for the real wargame purist. A simpler solution is the liberal use of imagination, coupled with a set of weather charts which show the effects of the elements on fire and movement. (Imagination can be helped by the installation of a rheostat control on the game room lights.) The type of weather encountered can be determined in either of two ways; the referee may simulate the weather conditions in the situation cards (if these are used), or the tables shown here and on the opposite page may be used.

The first table, and the simplest, has been prepared for the North Africa area, or for desert conditions anywhere. Using this chart, a die is rolled at the start of play and at intervals throughout the game (but not every turn), and the table below is consulted to find out the effect of the die roll. Thus, if a "2" is rolled, there is clear weather for the following period of play, and vehicles may move and fire as if under normal conditions. Should adverse weather conditions result, if a "3" or "4" turn up, the referee rolls again secretly, and the number that comes up will be the number of turns that the condition will last. Naturally, the referee does not inform the players of the results of his roll until the "storm" has run its course.

DESERT WEATHER

	WEATHER	EFFECT:
1	Clear	None
2	Clear	None
3	Khamseen	Movement 1/3 Normal; NO FIRING
4	Rain	Movement and Firing Range 1/2 Normal
5	Clear	None
6	Clear	None

beg'70

Note: "Khamseen" refers to the desert sand storms that are common to Libya.

European climates are a bit more complicated that that of the desert, and this is reflected in the other two charts given opposite. Although the tables operate in the same way as that for North Africa, there are a larger number of possible conditions, and these in turn depend upon the season of the year. Likewise, conditions last longer, and weather clears in stages, e.g. a Blizzard will last a minimum of 9 turns, counting the time from first snowfall until the mud dries.

WESTERN EUROPEAN WEATHER

	SPRING	SUMMER	AUTUMN	WINTER
1	Light Rain	Clear	Light Rain	Light Rain
2	Clear	Clear	Clear	Heavy Rain
3	Fog	Light Rain	Fog	Light Snow
4	Clear	Clear	Clear	Blizzard
5	Light Rain	Clear	Light Rain	Light Rain
6	Clear	Light Rain	Light Snow	Clear beg'70

EASTERN EUROPEAN WEATHER

	SPRING	SUMMER	AUTUMN	WINTER
1	Light Rain	Clear	Light Snow	Light Snow
2	Clear	Light Rain	Clear	Heavy Rain
3	Heavy Rain	Clear	Heavy Rain	Blizzard
4	Clear	Fog & Clouds	Clear	Light Snow
5	Light Rain	Clear	Light Snow	Blizzard
6	Fog	Clear	Fog	Fog beg'70

Weather Effects Table

Weather Type	Firing and Movement limitations
CLEAR	No effect on combat operations.
FOG	Visibility and Gun Range is reduced to 1/3rd of normal. Indirect fire is not effected, except that the Forward Observer's vision is limited. Movement is not effected.
MUD	Movement of wheeled vehicles is restricted to roadways. Tracked and half tracked vehicles' movement is reduced to 2/3rds of normal movement. Firing and Visibility are not effected.
LIGHT RAIN	Visibility and Gun Range is reduced to 2/3rds of normal. Movement for all vehicles is reduced to 2/3rds of normal while moving cross-country. Road movement is not effected. Light Rain turn is automatically followed by one turn of MUD.
HEAVY RAIN	Movement is restricted as for LIGHT RAIN. Visibility and Gun Range is reduced to 1/3rd of normal. Heavy Rain turn is automatically followed by one turn of LIGHT RAIN and one turn of MUD.
LIGHT SNOW	Visibility, Gun Range, and Movement are all reduced to 1/3rd of normal. Light Snow turn is automatically followed by one turn of FOG and MUD, and then a second turn of MUD.
BLIZZARD	A Blizzard is automatically preceded by one turn of LIGHT SNOW. Blizzards last a minimum of 3 turns, with movement of tracked vehicles reduced to 1/3rd of normal. Wheeled vehicles that are caught off roads are bogged down and may not move until the weather clears; those vehicles on the roads are reduced to 1/6th of normal movement. Visibility and Gun Range are reduced to 1/6th or normal. Blizzards are automatically followed by one turn of LIGHT SNOW, one turn of FOG and MUD, and another three turns of MUD.

The German 105mm Armored Artillery Battery

by Jim Steuard

The large amount of open space in North Africa and Russia presented several new problem areas to the higher German artillery commanders. The Germans required artillery which could be rapidly emplaced for fire, and which could accompany the attacking force over large amounts of terrain. The standard towed 10.5cm and 15cm artillery pieces were excellent weapons, however, it took several minutes to unhitch the weapon from its prime mover, and to emplace it for effective fire. While these weapons and their prime movers represented a good solution to the mobility requirements of the early war years, they, in fact, lacked the badly needed cross-country mobility to accompany an armored attack, and they lacked the necessary protection for the exposed crews.

By 1943, one Battalion of the Armored Artillery Regiment (or Panzer-Artillerie-Regiment) had been generally reorganized into a self-propelled gun unit, while the remaining two Battalions continued to be equipped with various types of towed weapons. The self-propelled Battalion (which was usually the I. Abteilung of the Regiment) was organized as follows:

Stab, Panzer-Artillerie-Abteilung	Artillery Battalion Headquarters
Stabs-Batterie	Headquarters Battery
1. Batterie (Sfl.)(10.5cm)	1st Battery (105mm SP Gun)
2. Batterie (Sfl.)(10.5cm)	2nd Battery (105mm SP Gun)
3. Batterie (Sfl.)(15cm)	3rd Battery (155mm SP Gun)

The two batteries that were designated as 10.5cm were equipped with the standard German light field howitzer, the 10.5cm l.F.H. 18, mounted on the converted and surplus chassis of the Pz.Kpfw.II. tank, and it was a highly effective initial solution to the German problems of mobility. The Germans recognized that this conversion was not the ideal solution, and several more effective designs were in various stages at the war's end. The initial conversion on the Panzer II. was designated as the 10.5cm Pz.F.H. 18/2 auf Pz.Kpfw.II.(Sfl.) Wespe, and it served until the end of the war, mainly due to lack of replacements.

The 3. Batterie, as indicated above, was equipped with the 15cm s.Pz.F.H. 18/1 auf GW III/IV., otherwise known as the "Hummel". The organization of this battery was discussed in AFV-G2, Volume I., Number 10 of January 1970.

The Batteries of the Battalion that were equipped with the "Wespe" were organized with sections, as follows:

Batterie Führer u. Batterie Trupp	Battery Command & Headquarters
Nachrichtenstaffel	Communications Section
Geschützstaffel	Gun Platoon
Munistaffel	Ammunition Section
Instandsetzungs-Gruppe	Maintenance Section
Batterie-Tross	Supply Section

The Headquarters Section was organized with a small Fire Direction Center of two light cars to provide supervision of fire during combat. The Battery Commander, generally an Oberleutnant (1st Lieutenant) or Hauptmann (Captain) was provided with a Schwimmwagen for reconnaissance of new positions. There was a motorcycle dispatch rider, and another light car for the administrative functions of the First Sergeant and the Battery Clerk.

The Communications Section was organized to provide internal communications with telephone switchboards and wire, as well as observation and adjustment of fire, using the two armored forward observation vehicles which were designed to accompany any attack, looking like the tanks that made the assault.

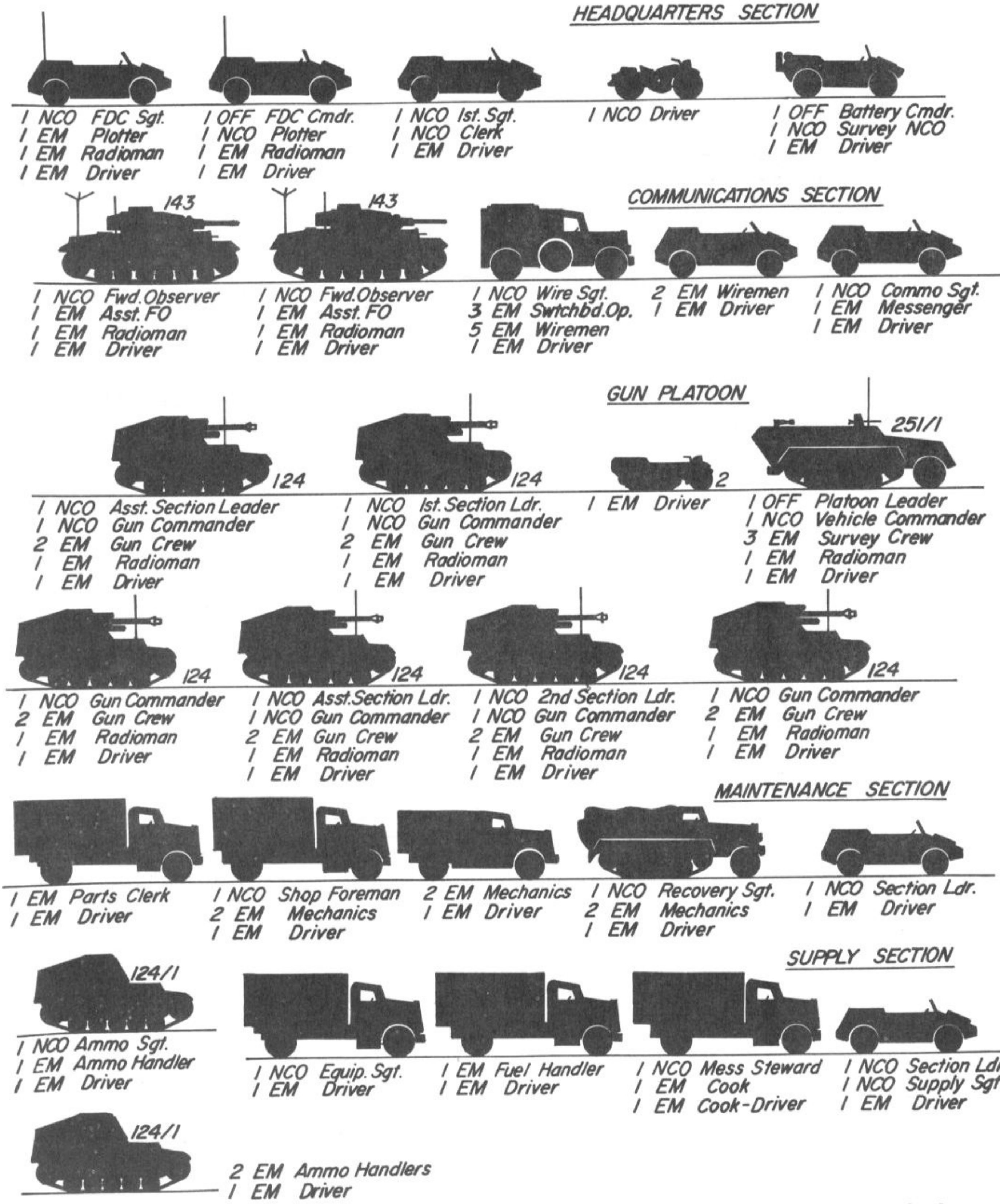
The Gun Platoon was provided with six of the 105mm guns mounted on the Panzer II. chassis; these guns were organized into two sections of three guns each. The Platoon Commander, generally a Leutnant (2nd Lieutenant) commanded the fire and movement of his platoon from his Sd.Kfz. 251/1 armored personnel carrier, which also carried the platoon headquarters. There was also an example of the tracked motorcycle (or Kettenkrad) for messenger purposes to Battery Headquarters.

The Maintenance Section was equipped for recovery and repair operations, to keep the vehicles of the battery running. It provided limited replacement parts and workshop service as needed.

The small Ammunition Section was equipped with two gunless "Wespe's" to carry shells to the Gun Platoon. These vehicles could be converted into normal gun vehicles if required as replacement

PANZER-ARTILLERIE BATTERIE "WESPE"

TYPE 1944



HEADQUARTERS SECTION

1 NCO FDC Sgt.
1 EM Plotter
1 EM Radioman
1 EM Driver

1 OFF FDC Cmdr.
1 NCO Plotter
1 EM Radioman
1 EM Driver

1 NCO 1st. Sgt.
1 NCO Clerk
1 EM Driver

1 NCO Driver

1 OFF Battery Cmdr.
1 NCO Survey NCO
1 EM Driver

COMMUNICATIONS SECTION

1 NCO Fwd.Observer
1 EM Asst.FO
1 EM Radioman
1 EM Driver

1 NCO Fwd.Observer
1 EM Asst.FO
1 EM Radioman
1 EM Driver

1 NCO Wire Sgt.
3 EM Swtchbd.Op.
5 EM Wiremen
1 EM Driver

2 EM Wiremen
1 EM Driver

1 NCO Commo Sgt.
1 EM Messenger
1 EM Driver

GUN PLATOON

1 NCO Asst. Section Leader
1 NCO Gun Commander
2 EM Gun Crew
1 EM Radioman
1 EM Driver

1 NCO 1st. Section Ldr.
1 NCO Gun Commander
2 EM Gun Crew
1 EM Radioman
1 EM Driver

1 EM Driver

1 OFF Platoon Leader
1 NCO Vehicle Commander
3 EM Survey Crew
1 EM Radioman
1 EM Driver

1 NCO Gun Commander
2 EM Gun Crew
1 EM Radioman
1 EM Driver

1 NCO Asst.Section Ldr.
1 NCO Gun Commander
2 EM Gun Crew
1 EM Radioman
1 EM Driver

1 NCO 2nd Section Ldr.
1 NCO Gun Commander
2 EM Gun Crew
1 EM Radioman
1 EM Driver

1 NCO Gun Commander
2 EM Gun Crew
1 EM Radioman
1 EM Driver

MAINTENANCE SECTION

1 EM Parts Clerk
1 EM Driver

1 NCO Shop Foreman
2 EM Mechanics
1 EM Driver

2 EM Mechanics
1 EM Driver

1 NCO Recovery Sgt.
2 EM Mechanics
1 EM Driver

1 NCO Section Ldr.
1 EM Driver

SUPPLY SECTION

1 NCO Ammo Sgt.
1 EM Ammo Handler
1 EM Driver

1 NCO Equip. Sgt.
1 EM Driver

1 EM Fuel Handler
1 EM Driver

1 NCO Mess Steward
1 EM Cook
1 EM Cook-Driver

1 NCO Section Ld
1 NCO Supply Sg
1 EM Driver

2 EM Ammo Handlers
1 EM Driver

JgS-70

The Baron's Corner

Modeling Hints by Norb Meyer
Submit your modeling problems in writing
to the Editor.

This month, I thought that it would be an interesting diversion if we discussed just what is "Scratch-building"? What is involved in this area of modeling?

First, let's discuss what scratch-building really is. When you build something from scratch you are taking sheets of plastic and various parts to create (and thats just what you're doing) a model that is as close to the real thing, in scale, as you can physically achieve. It is the author's opinion that this is the apex of the modeling art.

Scratch-building is an art! This is not to say that superdetailing or conversion of a kit is not art, but there is a bit more involved in scratch-building. One thing that I should like to make clear is that scratch-building is not hard. In fact, it is probably one of the easiest forms of modeling. Several factors are involved in this statement;one does not have to contend with existing detail when converting the structure of a kit to conform with differing requirements. Secondly, fit is better when you cut the pieces so that they will fit; none of this trying to put two pieces of a hull together that won't go together for love or money because of warpage,or because the dies were off to begin with.

Armor is one of the easiest types of model to build from scratch, at least World War II. vintage armor is. If you are a beginner in scratch-building, stick with the types of tanks that are slab or straight sided. This will save you the trouble of heating up a pan of hot water to soften the plastic to the point where it will bend to suit all sorts of curved shapes. Several modeling ideas for the beginner as projects would be the German Panzer III., the Sturmgeschütz III., or the reconnaissance version of the Czech 38(t) tank that appeared in last month's magazine.

Bear one thing in mind; the first piece of plastic that you cut may not always fit. It may take several tries, but at least sheet plastic is cheap. Always strive for perfection, otherwise you will be disappointed with the final result. One of the finest things to come along for the help of the beginning scratch-builder is the template style plans available from F. J. Tyson; these are mentioned in a product review elsewhere in the magazine.

Let's presume that you are building a Panzerkampfwagen III. just for a point of beginning. You will find that you will have to adjust your thinking; don't try to piece the top and the bottom of the hull together. Instead, take the cross section from the Bellona Plans, and enlarge them to the scale that you are working in, and checking the angles carefully, make a template for the hull side. Once you have a template drawn (usually on tracing paper) for one side, you won't have to make another template for the other side. Lay your template over a sheet of plastic; then using a pin or a sharp punch, make a dent at each corner of the template. Remove the paper and connect up the dots using a straight edge and the scriber. If possible, don't try to cut all the way through the sheet plastic; rather cut approximately half-way through and bend the outside portion until it snaps off. Clean up your first side and make another. After this is done, butt the two sides together and clamp them, making sure that you do not score the plastic. Now, take an emery board (fingernails...) and clean up both sides together so that they are exactly the same size and shape. Next, rule off a piece of plastic in the shape of a rectangle, so that the width is the same as the width of the tank (be sure to allow for the thickness of the plastic on both sides). Now is when the basic tank hull will begin to take shape, and now is when you want to be the most careful. Using the dimensions from the side plates, cut the various pieces for this width; ie. the hull bottom, the bottom front and rear plates, front top of the nose, etc. Be sure that each cross cut is at 90 degrees to the ruled width. Once these parts, have been cut out, bevel the edges that will have to fit together (not where these parts will fit to the side plates); this will allow for a very snug and sharp angular fit. When you get to the top hull section, you must decide what you will want to do for a turret. There is a choice of either using a pin (a piece of sprue approximately 1/16th inch in diameter) or whether you wish to use a turret ring (this is the harder of the two, but it looks nicer). If you decide to use the turret ring, you will need a circle template and a scriber; circle templates are available from any dime store for about 29¢. Position the circle template over the exact area where you wish the ring to go, then begin scribing around the circle, gently at first. Once you have scribed the circle, begin to break the inside out; all of this will have to be done before the hull top is installed. When the circle is broken out, take an X-acto knife and a circular file to clean up the hole. The hull top may now be installed. For the easier method using a pin, simply drill a hole about 1/16th inch in diameter in the exact center of the turret area.

We are now to the last piece to build before the detail begins to go on; this is the turret. Turrets are not difficult to build but they do require more thought and careful planning than the hull. With the Panzer III. ,we are lucky. If you have a Monogram Panzer IV. turret available, you might do one of two things. First, you could use the Panzer IV. turret, filing off approximately 1/16th of an inch from the turret bottom. This is a lot of work... The other thing that you might do is to use the turret to make tracings of each surface, and then construct each surface as a separate part and then cement them together as a complete sub-assembly, allowing for the shorter height of the Panzer III. Always remember to allow for the thickness of the plastic;this is a lesson the author learned the hard way.Once you have the turret pieces assembled, take a piece of .010 sheet and cut it to about one foot width in scale. Scribe a circle in the floor of the turret matching the one in the hull top. Install the strip of .010 sheet in the hole to become the turret ring; this will allow the turret to rotate.

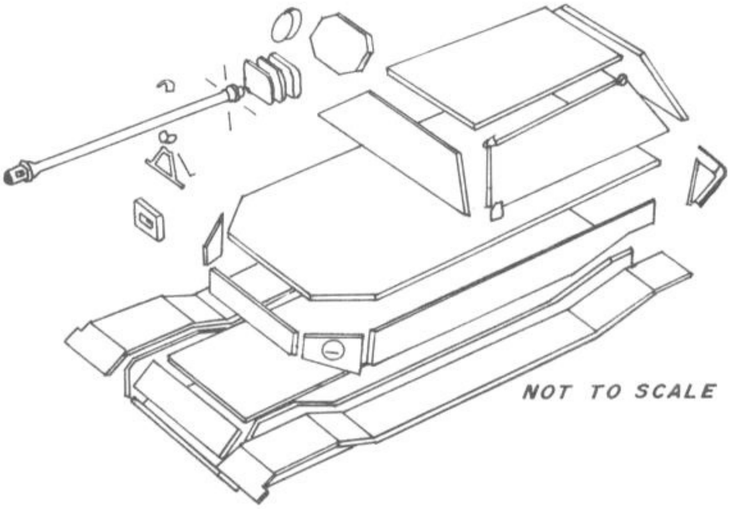


ILLUSTRATION COURTESY OF THE SQUADRON SHOP INC. & F.J. "RICK" TYSON

Now, we come to the thing that makes the model: the detail! Part of this is, of course, the suspension. A word to the wise! Don't start the model until you have worked out all of the details of the suspension out in your mind. Fortunately, the PzKw. III. suspension is all but done for us. The drivers are from the Monogram 'IV.' with the large hubs from the Aurora 1:48th Stalin. These hubs will have to be milled or sanded (depending on what tools you have available) to the proper shape. If you don't have a 'Moto-tool' and a reostat, then a 3/4-inch drill in a saddle would do the job. In fact it will probably work better; the biggest problem with milling plastic is to avoid the build-up of heat that will melt the job. Work slowly to get the correct profile. Next, the road wheels; these can be made from the Aurora Centurion kit wheels which are just the right size. They are not dished enough, but this can be taken care of with your drill and a sanding disk from the Moto-tool in the correct shape. The next step is to drill the six large holes and then the interspaced smaller holes in each road wheel. Take your time and drill each hole exactly spaced. Again this is not hard, but it does take an amount of patience. Finally, the rear idlers can be constructed from large size Plastruct tubing cut to the proper width to make the rim. The inside spokes can be made from a plastic wagon wheel, and this should not be hard to find with the number of toys available these days. The return rollers can be taken from the Aurora Churchill kit.... At this point, you might say that this is getting expensive, but there is one thing that the seriously inclined will need, and that is an adequately supplied spare parts box of everything. It does save money and time in the long run, for there will be many times that you will find just what you are looking for in your 'scrounge' box.

We are now ready for the fun part: the detail. I say 'fun' for this is what makes the entire model worth all of the time and effort. The track can come from the Monogram 'IV.',which you have already raided for the drivers, as well as the cupola. Hatches and engine covers can come from the .010 sheet styrene, unless you wish them to open (this is something we will cover in a later article)

Continued on Page 22

A. F. V. INQUIRY

The purpose of this section is to attempt to answer the questions of interested readers. Questions may be submitted by anyone, and should be sent to the Editor, at the address that appears on the cover. If the answer is urgently needed, please enclose a self-addressed and stamped envelope.

Question: What were the ARV's (Armored Recovery Vehicles) commonly used by the US Army and the German Army in World War II. ?

Answer: Let's take the German Wehrmacht first. In addition to the un-armored half-track vehicle types that were in use, the Germans produced full-tracked armored recovery vehicles based on the Pz. Kpfw. III., the Pz. Kpfw. 38(t), the Pz. Kpfw. V. Panther, the Pz. Kpfw. VI. Tiger, and the Jagdpanzer "Elefant" self-propelled gun; these ARV's were generally assigned to units that were equipped with the similar chassis tanks.

ARV's of the US Army were produced in a similar manner, based on the current medium tank chassis then in use. The table below lists the different AFV's based on the two main medium tanks, the M3 Grant and the M4 Sherman:

ARMORED RECOVERY VEHICLES (ARV's) OF THE U.S. ARMY IN WORLD WAR II.

by Jim Garrison

BASIC ARMORED VEHICLE OF ARV	*ARV DESIGNATION*
M-3 MEDIUM TANK	*M-31 RECOVERY VEH.*
M-3A3 MEDIUM TANK	*M-31B1 RECOV. VEHICLE*
M-3A5 MEDIUM TANK	*M-31B2 RECOV. VEHICLE*
M-4 MEDIUM TANK - VVSS	*M-32 RECOVERY VEHLE.*
M-4A1 MEDIUM TANK - VVSS	*M-32B1 RECOV. VEHICLE*
M-4A2 MEDIUM TANK - VVSS	*M-32B2 RECOV. VEHICLE*
M-4A3 MEDIUM TANK - VVSS	*M-32B3 RECOV. VEHICLE*
M-4A4 MEDIUM TANK - VVSS	*M-32B4 RECOV. VEHICLE*
M-4E8 MEDIUM TANK - HVSS	*M-32A1 RECOV. VEHICLE*
M-4A1E8 MEDIUM TANK - HVSS	*M-32A1B1 RECOVERY VEH.*
M-4A2E8 MEDIUM TANK - HVSS	*M-32A1B2 RECOV. VEH.*
M-4A3E8 MEDIUM TANK - HVSS	*M-32A1B3 RECOV. VEH.*

In the above table, the letters "VVSS" refer to the early pattern Vertical Volute Suspension System, while the letters "HVSS" refer to the later Horizonal Volute Suspension System which characterized the "Easy Eight" (or E8) modification to the basic M4 Sherman. The HVSS modification gave the later vehicles a wider track, lower ground pressure and a better ride.

The Baron's Corner: The Art of Scratch-Building... (Continued from Page 21)

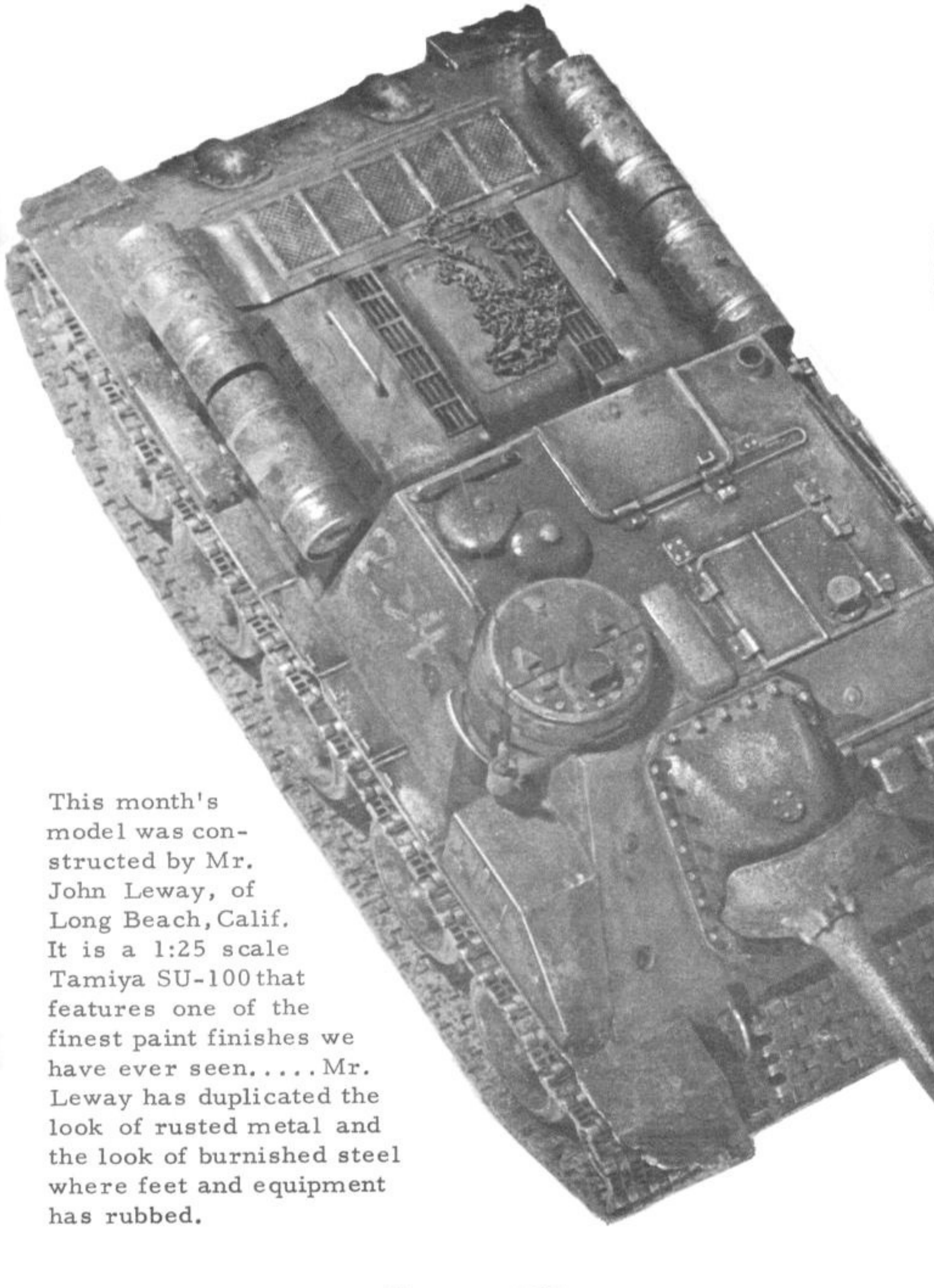
The driver's vision port can be made from the proper shaped Plastruct angle iron. Hinges can be filed from .060 sheet, using a triangular file. The engine covers have 'bonnets' that are hollow on the underside; make one master, then vac-u-form the rest of them. Cut holes in the covers and glue the bonnets over them. A few extra details and your model is finished.

As we stated earlier, scratch-building is the apex of the art. It may take time to become proficient, but in the end there will not be a vehicle that you will be afraid to try. For those of you out there who have been scratch-building for awhile, maybe this article has given you some fresh ideas. Then, to those of you who have not tried your hand as yet, maybe the article will have given you that incentive to go at it. Whatever, I wish you the best of luck. I would like to hear from those of you who have tried scratch-building, and who have some unusual ideas that we could impart to the readers.............

The Modeler's Page

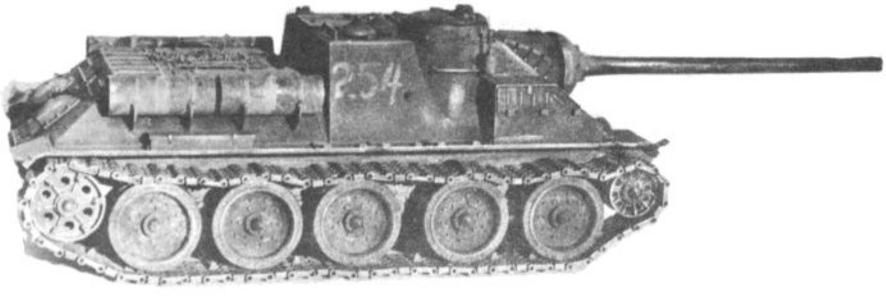
Devoted to the examination by photograph of some of the best examples of Armor Models, from Super-detailed Kit models, to unusual and unique Conversions, and finally, to the complete Scratch-Build armor model, the highest form of the modeler's art.........................

The Soviet SU-100 Assault-Gun: the most powerful of Tank Destroyers made by the Russians during World War II.



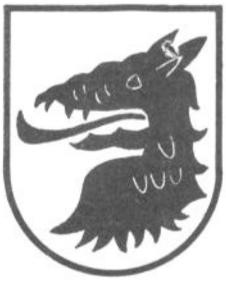
This month's model was constructed by Mr. John Leway, of Long Beach, Calif. It is a 1:25 scale Tamiya SU-100 that features one of the finest paint finishes we have ever seen.....Mr. Leway has duplicated the look of rusted metal and the look of burnished steel where feet and equipment has rubbed.

Painting is an often neglected art in itself. In this month's example, the vehicle is well-modeled, but it is the superb finish that attracts all of the attention. Mr. Leway must be congratulated for his well-worn Soviet SU-100.



Sturmgeschütz-Brigade 341.

by Jim Steuard



Tactical Symbol Sturmgeschütz-Brigade 341.

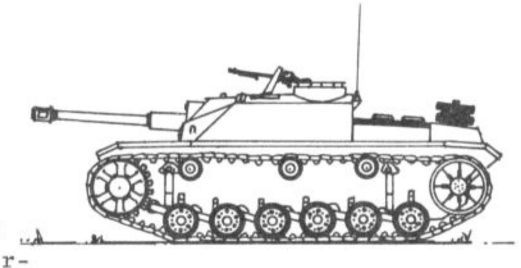
Sturmgeschütz-Brigade 341. was formed in May 1943 at Neisse; the mass of the personnel being transferred from Sturmgeschütz-Ersatzabteilung 300. (Assault Gun Replacement Battalion 300.) The Battalion Commander of the Replacement unit, Hauptmann (or Captain) Bumm, took command of the new Brigade. Since the order that formed the Brigade was titled "Operation Griffen", it was natural that the tactical symbol that was chosen for the Brigade would represent a griffen; it represented the head of a griffen as illustrated at the left. The formation of the new unit was followed by concentrated and effective training, which lasted until October 1943, at the Dieskau-Kaserne at Neisse.

In November 1943, the newly trained Assault Gun Brigade was loaded on a troop train for movement. The rail movement took them west to Tours, France, where the Brigade was placed under the operational command of Sturmgeschütz-Aufstellungs-Stab West (or Assault Gun Employment Staff West), a headquarters that trained and inspected assault gun units that were using France as a training ground. After their arrival in France, Sturmgeschütz-Brigade 341. participated in a number of operational tests and manuevers, until March of 1944, when they were judged 100% operational, with full equipment and personnel. Since it was now ready for a combat assignment, the Brigade was moved by rail to Norbonne and then to Carcassonne, in the southern part of France. As one of the very few assault gun units in the south of the country, Sturmgeschütz-Brigade 341. was charged with the security of the Mediterranean coast from astride the strategic Carcassonne Gap, which controlled the entire area. However, their presence was not really needed, for the countryside was quiet. Partisan activity had been somewhat halted, since the Allied invasion was in preparation, and the Allies did not want undue partisan attacks to alarm the Germans. With the exception of a number of practice alerts, the months preceding the Normandy invasion were the quiet "lull before the storm".

With the start of the Allied invasion into north-west Europe, the Assault Gun Brigade was placed on full alert status, for movement to the combat zone. The movement orders did not come immediately, however, since the German High Command was unsure that the main Allied effort was ashore or not. All German armored reinforcements were held in their positions, awaiting orders when the situation became more clear. The expected move came for Sturmgeschütz-Brigade 341.on July 27th, and the Brigade quickly moved north. The assault guns went into combat against the Americans near the French towns of Brécey and Avranches on July 31st. The fighting was severe and difficult for both sides in the cut-up hedgerows. Allied airpower was rampant, and there were large numbers of Sherman tanks to oppose the Sturmgeschütz III.'s of the Brigade. Near Brécey, the commander of the 1. Batterie, Hauptmann Pazur, was killed. He had helped to form the Brigade as an Oberleutnant (or 1st Lieutenant). On the next day, the commander of the 2. Batterie, Oberleutnant Kolb was also killed. Twelve of the fourteen assault guns of the 1. Batterie were destroyed in the fierce fighting, and the 2. and 3. Batterien were also virtually destroyed with heavy losses. An especially badly felt loss was the death of Oberwachtmeister (or Platoon Sergeant) Kurt Kirchner, who had been awarded the Knight's Cross of the Iron Cross in 1942, while serving as a member of Sturmgeschütz-Batterie 667. He received the award for the personal destruction of 30 Soviet T-34 tanks in a single day, while on the Leningrad front. He had joined the Brigade during its formation, and had been instrumental in its combat training.

After this period of intense fighting, Sturmgeschütz-Brigade 341. was pulled-out of combat and new vehicles and personnel were brought up from replacement pools at Tours and Paris. After a short pause to integrate personnel and equipment, the Brigade moved back into the fighting, near Dinant and St. Malo. Allied air cover and the numerous Shermans again began to take a heavy toll of the assault guns, as the Brigade was involved in attempting to stop the American advance. The last original battery commander, Oberleutnant Diehl of the 3. Batterie, was captured during a German counterattack. After his capture, all three gun batteries were led by 2nd Lieutenants. Hauptmann Bumm, the Brigade Commander, was wounded; he died during the evacuation from the position. He was replaced by Hauptmann Dreier. Within a short time, the effectiveness of the Brigade was again at a low point, due to losses of personnel and equipment to the Allied superiority in both air power and ground equipment.

For the third time, Sturmgeschütz-Brigade 341. was rebuilt from the ashes. The combat batteries were pulled-back to the area near Paris and St. Germaine that had been selected as quiet and relatively free of partisan activity. Here the Brigade received their replacement personnel and the Sturmgeschütz III. assault guns necessary to rebuild to effective strength. After a pause of two to three weeks, used for intensive training, the Brigade moved forward again, and combat against the advancing Allied armies was again the "order of the day". The batteries fought at Fontainebleau, Epernay and Provins, against large numbers of Shermans and M-10 tank destroyers. Within a short period of time, the Brigade was again at a low level of effectiveness, and it was forced to join the retreat of the Wehrmacht back towards the Rhine. Their route of retreat led through Reims, and eventually to Aachen, where a number of replacement vehicles were again received to assist in raising the combat serviceability of the batteries. The Brigade was assigned to the German garrison in Aachen, who were preparing to defend the city against the American forces. A new commander for the Brigade arrived in September 1944, during partial retraining; he was Hauptmann Barkley. His earlier experiences had been as the battery commander of Sturmgeschütz-Batterie 660. on the eastern front, and his experience was soon demonstrated in retraining the Brigade for combat. In October, most of the Brigade was moved to the Hürtzen forest area, to act as armor support for the infantry who were locked in close-combat with the Americans. The 1. Batterie, under the command of Oberleutnant Wolz, remained in Aachen as a part of the city's defense.



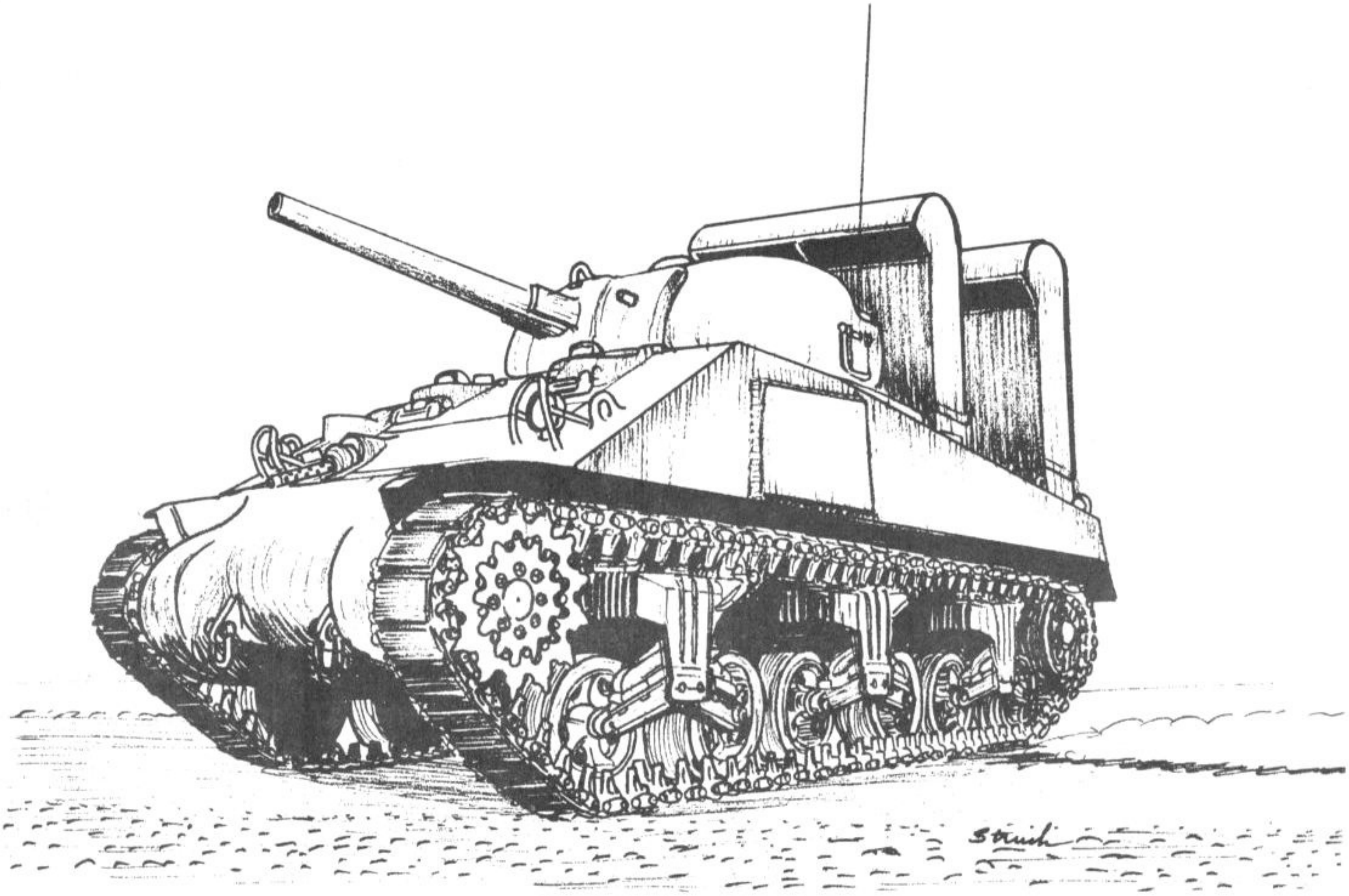
In late October 1944, the Brigade was reassembled in the area around Kaster, near Bedburg. New replacements and vehicles arrived soon, and the batteries again began intensive retraining, under close security. There were no leaves or overnight passes, and the troops began to wonder exactly what all the security was about. They were soon to find out, as Sturmgeschütz-Brigade 341. was scheduled as armor support for units in the famous Ardennes battle.

Initially, there was a good degree of success in the "Battle of the Bulge"; with overcast sky and superiority of numbers, the German offensive gained much ground. When the skies cleared, it was a "horse of a different color", and the Allied tactical air forces ruled the skies, taking a large toll of the attacking German armor. The losses of the Sturmgeschütz-Brigade were heavy, especially in terms of officers. Hauptmann Barkley, the Brigade Commander, was killed, while talking with Oberleutnant Bender, the new commander of the 1. Batterie, and a staff officer from the Sturmartillerie-Schule (or School); they were also killed.

Following the Ardennes offensive, the Brigade was reassembled. The new Brigade Commander was Hauptmann Ertel, who had been a battery commander in Sturmgeschütz-Brigade 276., and had been awarded the Knight's Cross in February 1944. He led the Brigade in the fierce fighting in the area of Jülich-Düren-Linnich. In late January of 1945, he was killed when his command Sturmgeschütz hit a mine.

Hauptmann Alfred Montag assumed command following the death of Hauptmann Ertel, and he commanded the Brigade until the end of the war; through the fighting in Siegerland and in the Sauerland that lasted through March. During these months, large numbers of the Brigade's personnel surrendered to the Americans, and the Brigade shrunk in size to approximately 100 men; replacements were unattainable and new equipment was non-existant. The remnants of the Brigade were in the process of forming a "Jagdkommando" at Bad Tolz as the war came to an end. This "hunting commando", equipped with Panzerfaust's and Grenades, was to combat the American tanks in hand-to-hand combat. It was lucky for both sides that the war ended when it did.

Sturmgeschütz-Brigade 341. was an unusual unit. It was one of the very few Assault Gun Brigades that fought solely in the West, against the Americans. It suffered extremely heavy losses, in fact being rebuilt six times. It had five different Brigade commanders, including two who had won the Knight's Cross with previous units. It had seen heavy combat, and yet no member of the Brigade had been awarded high decorations during this combat. Perhaps their best epitaph could be: "they did their duty", and it is hoped that this article would give a better insight into combat on the western front, and the differences between western and eastern fronts.



Marine Tanks in the Pacific - Part IX.

by Joe Stuck

After the two Marine beachheads on Guam had been joined, the Third Marine Division moved east and captured Guam's capital city of Agana and the Tiyan airfield beyond, against only minor enemy resistance. Rough terrain, heat and too many flies and mosquitoes were more of a hindrance then the enemy. The Third Division on the left and the Army 77th Infantry on the right drove northward up the island with little opposition, until the 9th Marines had to fight for Finegayan. Tanks helped them overrun defenders who were dug-in well organized positions.

An armored reconnaissance patrol was formed of Company A and HQ, 3rd Tanks, with an attached reinforced infantry company with two half tracks, four jeeps and six trucks. The patrol passed out into enemy territory past Marines digging in for the night. It did not get far down the road before being stopped by an enemy roadblock. The leading halftrack was destroyed, a Sherman slightly damaged and a truck was wrecked. A Japanese tank was destroyed, two 75mm guns knocked out along with a number of machine guns and Japanese troops, before.the patrol withdrew toMarine lines.

That night two Japanese medium tanks made a little raid behind Marine lines. 37mm antitank guns could not stop them when they broke through on the road, crushing a trail on an antitank gun. They surprised some parked Marine tanks, fired and then hastily withdrew. A 57mm projectile penetrated the armor of a Sherman's right sponson, but did little damage.

The enemy roadblock position resisted the Marine attack the next day and delayed the advance For a renewed attack, a tank platoon was attached to each assault rifle company. While two companies attacked frontally, the third attempted to outflank the strongpoint and Marine tanks were hit hard by Japanese antitank fire. Tankers and riflemen fought their way through the roadblock.

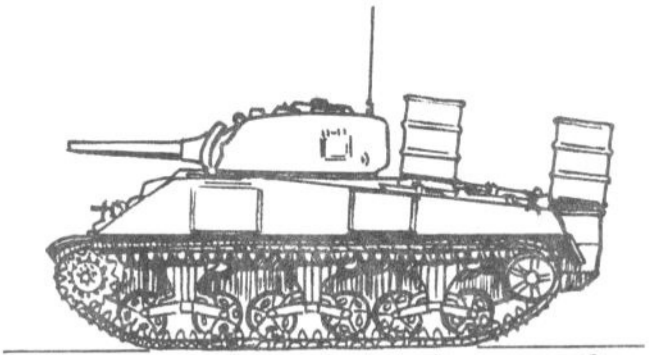
Shortly, the Japanese counterattacked down the road, led by a tank; it was destroyed and the enemy infantry scattered. Supported by a few Shermans, the Marines pursued them, killing fifteen before breaking off action within the 77th Division's zone.

After Finegayan, the Third Division drove rapidly north with little enemy opposition. A brigade was put into the line on the left flank as the advance encountered increasingly thicker jungle.

Early on August 9th, the 3rd Marines were struck by an enemy tank-infantry attack with five medium tanks. Marine tanks were gotten forward through the thick jungle with difficulty, in an effort to close with the Japanese armor. Tanks followed bulldozers who broke a trail. The Marines advanced the next day with armor and continued to search for them. When two Japanese mediums opened fire upon the point of the 3rd Marines;a platoon of Shermans were close behind and destroyed the Japanese tanks. The advance continued and seven more Japanese mediums were found abandoned. These were the last of 59 Japanese tanks on Guam. The northernmost Ritidian Point was reached that day and Guam was declared conquered. Three weeks of continual support and numerous actions were over for the tankers of the 3rd Tanks, and the 4th and 22nd regimental tank companies.

After the conquest of the Marshalls, the Japanese expected and prepared for the invasion of the Palaus. A tenacious defense of Peleliu was planned with a new defense-in-depth strategy to hold the high ground instead of trying to stop the assault at the beaches, and deny the use of the island with hidden artillery. Peleliu was ideal for this plan. Rising above the island's airfield was a two mile wooded ridge of honeycombed coral limestone called Umurbrogal but which the Marines would rename "Bloody-Nose Ridge".

The 1st Tank Battalion was now equipped with 46 new M4A2 diesel-engined Shermans. When First Division loaded for the landing, only thirty tanks could be taken. Sixteen were left behind at Pavuvu. Fifteen tanks of Co. A supported the 1st Marines, nine tanks of Co. B were with the 5th Marines and six tanks of Co. C supported the 7th Marines. Three of these were tankdozers. HQ and other tankers went along and served as replacements.



M4 Sherman with improvised fording gear on Guam

On September 15th, the First Marine Division landed on Peleliu's reef-obstructed beach; three regiments abreast: the 1st Marines on the left, the 5th in the center, and the 7th on the right. Three assault waves went in through artillery and mortar fire. Tanks debarked from LCMs at the edge of the coral reef and waded through the heavy enemy fire following the amtracks. All but one of the fifteen tanks of Co. A were hit by artillery shells but only three were knocked out. Of the thirty tanks, more than half were hit by one to as many as four shells, during the ten minutes it took them to wade ashore.

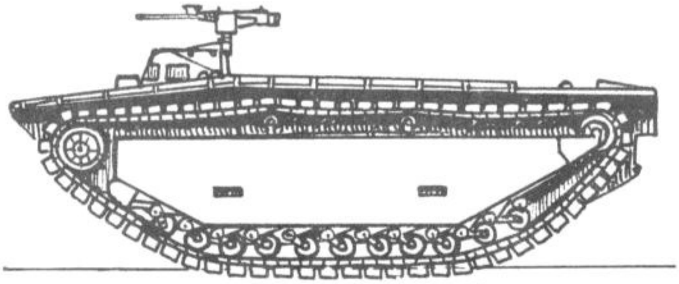
Company B tanks on the right were blocked by mines on the beach. One of the tank commanders got out and scouted a path on foot trailing a roll of toilet paper, and led the tanks across the mined beach. The tanks moved inland through the shelling and supported the Marines' advance.

The 1st Marines were stopped at the beach by a long formidable coral ridge honeycombed with caves and dug-in gun positions. Assaults supported by Shermans were repulsed and six more of Company A's tanks were knocked out during the first few hours of fighting.

A Japanese tank-infantry attack was made late in the afternoon. Nineteen tanks, with infantry riding on top, came in a cavalry charge, and were subjected to everything the Marines could throw at them. Eight of Co.A's tanks were in the process of rearming; they moved out of the brush a few yards onto the airfield and engaged the passing Japanese tanks at 50 yards. Three tanks of Co. B were in hull down positions, and took them under fire straight on. Four other Shermans of Co. B came charging onto the southern end of the runway, charged toward the enemy tanks and ended up among them. The tank-riding infantry were obliterated as the tanks were quickly demolished. Several surviving tanks overran Marine lines, and crushed a couple of Marines, wounding or burning others as they were hit and exploded. One nearly made it to the beach before being liquidated. When the dust and smoke of battle blew away, enemy troops had withdrawn, thirteen wrecked Japanese tanks, and many bodies littered the airfield and Marine front line positions. Only two escaped.

The 5th Marines reached the other coast, cutting off the southern portion of Peleliu which was under attack by the 7th Marines, who were attacking southward encountering numerous bunkers and pillboxes. The Shermans of Co. C delivered covering fire directly on emplacements while flamethrowers and demolition men destroyed the holed-up Japanese. A three day push herded them into a pair of fortified promontories; and a rifle platoon and three tanks gained a foothold on one and then overran the position. The other promontory was more formidable; the first attack was stopped cold. Three tanks led the next assault and captured the first defenses. Having gained the high ground, they were joined by a fourth tank, and the Marines reduced it as well. The few remaining Japanese on southern Peleliu committed suicide, tried to swim away, or fought to their death.

The 5th Marines wheeled northeast and swept across the airfield, spearheaded by their tanks At the end of the day, the line was across the island at the northern end of the airfield. Umurbrogal loomed ahead.



Landing Vehicle Tracked - LVT-2

Now the tanks reverted back to 1st Tank Battalion control; parts of companies and platoons of tanks were constantly shifted from regiment to battalion where they were most needed. There had been too few to begin with and many had been knocked out. At the end of the second day, only five of the fifteen company tanks were still in operating condition. Maintenance men somehow managed to keep as many as twenty in action. Extra tankers took the place of those that were killed or wounded. On the third day, the 5th Marines advanced across the low ground of Peleliu's east coast, under fire from Umurbrogal on their left. Artillery shells poured down except when they moved through the almost impenetrable jungle. Whenever a supporting Sherman tried to skirt the jungle's edge, the Japanese called down artillery concentrations on it.

The Marines hacked their way through the jungle and advanced slowly, mopping up enemy resistance. By late afternoon on September 20th, the northern tip of the northeastern peninsula was secured. The few attached tanks were returned south to join the main fighting that was now moving towards Umurbrogal.

PRODUCT REVIEW: WWII. German Armor Templates by Norb Meyer

We are faced with a rather unusual product to review for this month. We are reviewing a set of fold-out template style plans of various German armored vehicles. Series 1., which we have received, contains plans to construct a complete Sd. Kfz. 222/223 4-wheeled armored car, the superstructure of the Sd. Kfz. 166 Grizzly Bear assault gun, the turret for the Ostwind 3.7cm Flak vehicle, the complete Jagdpanzer "Elefant", the small German armored train (or Panzer-Draisinen) and the turret for the early version of the Tiger II. tank. These are available in two scales; Series 1A. is in a scale of 1:32 and it contains two sheets of blueprinted plans. Series 1B. contains the same vehicles in a scale of 1:76; all vehicles fit on a single sheet of blueprinted plans. These fold-out or template style plans are similar to those that we have included in our Wargame Conversion articles and also similar to those that appeared in the IPMS Quarterly. I must say that it is very nice to see this kind of effort available to armor modelers.

In use, the templates are placed over carbon-paper covered sheet styrene, and they are traced onto the plastic, which is then cut out, scribed and folded into the assembled superstructure, turret, or assembled model. The templates seem quite accurate and they assemble nicely into good-looking basic conversions, on which extra detail may be easily added.

The price for each series is $1.75. To my mind, this is quite a reasonable price for the number of vehicle plans that you get. The drawings are well done by a professional illustrator, and you also get a number of notes, which list the source of parts needed, give some of the background history on the vehicles, and give instructions on special folds or joints that are helpful in assembly of the completed detailed model.

Only 2000 of each set of plans were printed; this was a limited run which will not be repeated. Series 2 (A and B) will be available in the Fall of 1970; it will include plans for the Jagdpanzer "Hetzer", the Sturmtiger, the Jagdpanzer IV. conversion, and many more. These plans are available from the Squadron Shop, from J. W. Caler Aeronautica, and from F. J. Tyson, at 3438 Sockwell Blvd., Greenville, Texas 75401.

PRODUCT REVIEW: Monogram Sturmgeschütz IV. by Lonnie Gill

If the real Sturmgeschütz IV. consisted of a Sturm III. top on a Panzer IV. chassis, then the new kit from Monogram......... You guessed it,--the new offering has the same hull, suspension, and figures as Monogram's other Mark IV. variations. As mentioned in the product reviews of the Panzer IV. (AFV-G2, Vol. I., No. 11) and the Flakpanzer IV. (AFV-G2, Vol. II, No. 3), these parts are well done, and the bonded tracks are beautiful. The new kit also has the spare track, road wheels, and 'jerry cans' which are such a help in detailing a model. I wish other manufacturers would follow Monogram's lead.

The kit's sideskirting is similar to the earlier types, but has a new pattern. Both the skirting and the bracing are too thick; use them as patterns to make new ones out of .010 plasticard to get the scale effect. The instruction sheet says that the hull mounting brackets should be cut off if the skirting is not used, but photographs show the brackets left on.

New, of course, is the Sturmgeschütz hull top. This is clean and well molded, even the weld seams along the top. You will, however, need to fill in the four small molding dimples near the gun mount. The gun aperture is the kit's major flaw. Even with the gun mounted, the lower aperture is a VAST HOLE. You will need to plate this hole in with plasticard. Also new, the machine gun mounting, complete with shield and MG-34, begs for detailing (see Military Panorama I. by Feist). The MG-34 is passable, but underscale and scarce in detail. If you use it, mount it by the rear bipod fitting rather than the pin provided. The MG and the shield are the real 'eye catchers' of the kit -- don't neglect them.

To prove that modeling has its humorous side, Monogram included a decal sheet, For the simplistic, there's the German version of 'Big Bertha', and Monogram's affliction with 'Braun-ark is carried to yet another kit. The two part numerals are nice, but Sturmgeschütz battalions didn't have a fourth battery, so don't put the 'four' first as shown in the instructions. Also, don't put both divisional markings on the vehicle either. Lastly, don't paint the crews with black uniforms...... assault gun crews had similar uniforms, but in field green.

Once you get over the disappointment of a kit that is only half-new, you find that it is a good replica of a rare (only 637 produced) vehicle, and it is well worth adding to your collection. My kit cost $2.44, in a store not known for its discounts, but since Monogram no longer prints the price on the box, it may vary. Incidently, have you noticed that Monogram gave the first of these kits to the 'toy' stores, maybe this is a fair indication of Manny Matel's new hobby shop strategy........

German Land Mines, and Allied Countermeasures (Continued from Page 7.)

The SCR-625 was sensative to magnetic soil conditions, and Italy abounded in highly magnetic soil and rocks. The sensativity of the detector therefore had to be reduced to make it workable, and this corresponding reduced the reliability in the detection of metallic objects. Nevertheless, no more practical detector for metallic mines was developed for field use by the American forces.

AFV-ID QUIZ CONTEST ANSWER: The mystery vehicle that was illustrated in last month's contest was the US Army T4 Infantry Tank of 1937, which utilized the famous Christie suspension system.

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